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PSYCHOLOGY AND SCIENTIFIC METHODS

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PSYCHOLOGY

AND

SCIENTIFIC METHODS

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PSYCHOLOGY AND SCIENTIFIC METHODS

PROBLEMS IN THE ANALYSIS OF THE MEMORY CONSCIOUSNESS¹

I. *General relation of perception and memory.*—Memory investigation has reached a stage in which a significant turn in its course has become necessary and has already begun. As a result of a vigorous pursuit of quantitative studies, with objective methods, the psychology of memory is now confronted by a variety of questions that relate to the nature of the memory content and the mechanism of its functioning. We have ceased to be satisfied with the conception of memory as reproduced past experience, of images as faint copies of original perceptions. We may regard this condition as a good index of the state of our progress. With the object in mind of outlining the present status of the psychology of memory analysis, let me bring together in brief form the problems that at present seem to me central in the studies and discussions before us. I shall approach them from a biological point of view, which is dominant, or at least prominent, in a number of studies on memory analysis.

Biological interpretation both of perceptive experience and of memory is giving us a new view of their interrelation, and is adding interest to studies in memory analysis. With reference to the former, we have been accustomed to regard the sensory elements evoked through the special senses and perhaps the immediately aroused special sense images as the sole factors in determining conduct, and as constituting the total perceptive content. But we are just beginning to learn the fact, the exact nature and details of which are all yet to be made out, that every sensory stimulus evokes not only these special sensory elements, but also a more or less extended organic reaction throughout the organism. A complex of organic sensations furnishes a background to the sensory elements from the special sense organs. The human mind is objectively directed, and we are usually unaware of the existence of such a back-

¹Read in abstract at the joint meeting of the Western Philosophical Association and the North Central Section of the American Psychological Association, Madison, Wisconsin, April 13, 1906.

ground; the organic reaction is little obvious as a part of perception. But its lack of prominence in consciousness is not a correct index of its utility. Throughout the course of biological development of the organism the organic factor has been the more important for conduct. It has been the factor determining whether or not an object should receive attention, in other words, should be perceived in terms of special sensations. It has determined both perception and action.²

The determination of the presence of special groups of organic sensations in perception has brought with it the question as to their presence and function in memory consciousness. The discovery that in the recognition of a stimulus presented a second time the special sense image of the first stimulus may be absent, while organic factors aroused by the first reappear to mediate recognition, has initiated a wide departure from the view of memory as made up of special sense images. It has, further, made possible a reinterpretation of animal consciousness, viewed essentially from an evolutionary standpoint. Animal psychology has denied memory of any sort to some animals. It has, on the other hand, attributed different forms of memory to those that manifest the ability to learn.³ We are thus brought to the general view of possibly a wide discrepancy between the inner organization of perceptive and memory consciousness. Certain factors that are present in the former may never reappear in the latter. What is useful to the life of the organism in perception may not be thus useful in memory, while, as we have indeed always supposed, certain new elements in memory may be necessary to serve a function not shared by perceptive experience. We are confronted by the general problem of the analysis of the memory consciousness.

A summary of the questions in the field, which have for the most part been already stated in some form by different writers, may be

² This view of the existence and rôle of organic complexes in the biological development of perception has been stated in more detail by Bolton, 'A Biological View of Perception,' *Psychological Review*, 1902. The existence in human consciousness of some organic reaction in the perception of special sense stimuli had already been demonstrated in the concrete in the studies by Bentley and Whipple, who have also to some extent traced its presence and function in recognitive consciousness. Bentley, 'The Memory Image and Its Qualitative Fidelity,' *American Journal of Psychology*, 1899. Whipple, 'An Analytic Study on the Memory Image and the Process of Judgment in the Discrimination of Clangs and Tones,' *American Journal of Psychology*, 1901 and 1902.

³ I have in another place briefly summarized different views that different writers in animal psychology have either unconsciously adopted or explicitly expounded in the interpretation of animal behavior. See 'The Place of Mental Imagery and Memory among Mental Functions,' *American Journal of Psychology*, 1905.

presented under three topics: First, the analysis of the memory consciousness into its elements; secondly, the functions of these elements in the memory consciousness; thirdly, the nature and causes of memory illusion. In stating them in this general form it is not meant that these three groups of problems are in any great degree distinct in the sense of their offering separate objects of investigation. Indeed, any method of study that will answer our inquiry in the first group is likely also to show us much concerning the different functions of the different complexes in the memory content. While a determination of the nature and causes of memory illusion offers a very real and tangible means of getting some insight into the ways in which our memory consciousness works.

II. *Analysis of the memory consciousness into its elements.*—The more special questions concerning the analysis of the memory consciousness into its elements center around (A) that of images of sensations from the special sense organs; (B) organic images in general; (C) historically, the question of the elements in the recognitive consciousness has always had a separate interest.

A. Special sense images. (1) Their general character. The general character of special sense images as compared with their representatives in perceptive experience has always been a problem. And we have a variety of answers. It is clear that in every-day life the distinction in question offers no difficulties, and that in every-day life it is most essential that the distinction should be readily and promptly made in every case. It is peculiar that we should not be able to describe that difference in a way to which all would at once agree. Perhaps the question is not a fair one, and has arisen only because we have attempted to compare the abstract special sense image with the abstract special sensation, instead of to describe the difference between two concrete realities. This, too, awaits an answer.

(2) Relative ease of arousal within a given sense department. Our mental imagery studies have not, as a rule, attempted to give us any information on the relative ease of arousing different images within a given sense department. Of the total experience for a given sense, what proportion can be aroused at all in terms of images? We can, for example, sit down by the color wheel and discriminate in perception a very large number of colors and shades. But a similar attempt to recall all the discriminable color images will yield comparatively very few, while of those that can be aroused some will appear with much greater ease and readiness than others. No small degree of interest attaches to the determination of the scope of this truth. The question is a general one, and involves that of the relation in which the different senses stand to each other in this

respect. Even the 'visualist' can image only a small portion of the elements of his total visual experience. At the same time, we are familiar with the denial that very many or even any olfactory or gustatory images can be aroused at all.

(3) Relative ease of arousal of different classes. Mental imagery studies have concerned themselves for the most part with the determination of types, the relative ease of the arousal of different classes of images, and the individual variations in this respect. Having experienced an object through more than one sense, we have the choice of using visual, auditory or other image as a symbol of that object in any particular case. In this is given the possibility of wide differences between perceptive and memory experience in the concrete instances. The comparative infrequency of olfactory and gustatory images, even for those objects in whose smell and taste we are more interested than in their visual or other aspects, and the sometimes almost wholesale substitution of verbal for other, special sense imagery, give us some idea of the extremes of such differences. The more exact determination of the whole range and character of such substitutions of one class of imagery for another constitutes the problem of the types of mental imagery.

B. Organic images in general. (1) Absence of a psychology of organic sensation. When we turn to discuss problems in the memory of organic sensations we meet at once no small degree of confusion, most of which results from the fact that we have as yet no psychology of organic sensations.⁴ No definite line is drawn between organic sensations and sensations through special sense organs. No definite break seems to exist in the modes of arousal and the nature of the functions of the two classes of sensory elements. Yet well within the realm of the organic we are vaguely aware of a considerable variety of groups of organic sensations that seem to serve more or less definite functions. Had we as complete a knowledge of their nature, their points of origin and their functions as we have of the special sensations we might possibly find that they play an equal, though a quite different rôle in consciousness. And, as has indeed been often noted, could we induce and control them as readily as we can control external stimuli our psychology of organic sensations might present a brighter future. But the discussion of organic

⁴Says Titchener: "Of organic sensations in general, we know practically nothing. . . . We can hardly fail to see that here is a great gap in our psychological knowledge, the filling of which calls for a persistent application of the experimental method. Of all problems in the psychology of sense that are now before us, the problem of the number, nature and laws of connection of the organic sensations appears to me to be the most pressing." 'The Problems of Experimental Psychology,' *American Journal of Psychology*, 1905.

sensations is outside our present interest. What can we say about the memory of organic sensations?

(2) Denial of the existence of organic images. Here at the outset we meet a most fundamental proposition, one that denies the existence of any organic images. It holds that the memory of emotions consists not in arousing organic images, but organic sensations. The special sense images that enter the emotional complex are regarded as setting up again the actual bodily processes that constitute the organic reaction. Further, we meet the statement that there 'is no biological sanction for organic images.'⁵ In the presence of our bodies is given the permanent possibility of arousing actual organic sensations whenever they are needed. One must undoubtedly admit a considerable degree of truth in this view. But its universality may have to be denied. In this state of our theories the determination of this point becomes our first problem in the memory of organic sensations. Possibly if the line were properly drawn between organic sensations and sensation from the special senses, the proposition that there are no organic images would be found to be true. Or, possibly certain sensorial complexes, which because of their general function must be classed as organic, never appear as images, while others do.⁶

(3) Range of voluntary arousal of organic factors and their character. If this question were decided for the various groups of organic factors we would have left to determine, among the purely analytical problems, the range of their voluntary arousal in whatever form, sensation or image, and the general character in which they appear when thus aroused. For practical purposes we may draw a line here between memory states in which the organic elements are the predominant and those in which the special sense images are the predominant parts. Roughly speaking, the first concerns the memory of organic factors in the emotions; the second concerns the presence and character of organic factors with special sense images, the reproduction in memory of what was described above as the organic background in all perceptive experience. The line is admittedly drawn very roughly, and the term 'organic' is used to include everything that can not be classed with the special sensations. In the former we have as many special problems as we have kinds of emotional states. From general observation we note some difference in the relative ease of arousal of some emotional states. On *a priori* grounds we can see that the organism might have need of the ability

⁵ Titchener, 'Organic Images,' this JOURNAL, Vol. I., p. 36.

⁶ For a general discussion of affective memory see Paulhan, 'La fonction de la mémoire et la souvenir affectif,' Paris, 1904; Pilton, 'La mémoire affectif,' *Revue Philosophique*, 1901; Mauxion, 'La vraie mémoire affectif,' *Revue Philosophique*, 1901.

to voluntarily arouse some, while it would have no such need for others. This is a beginning. The task of tracing through our memory consciousness each differentiated group of organic elements is before us, awaiting first their analysis as a problem in the psychology of organic sensations. With reference to the latter but little can be said further. To the extent that every perception is an attitude towards its object (this attitude consisting of organic sensations) as well as a complex of special sense factors we have the question as to its presence and nature in the recall of that object. Is the reproduction of this attitude a feature of the special sense image? We know already that in a very rough way it is, and it has, further, been determined that certain ones of these organic sensations set up by an external stimulus play a part in recognitive consciousness. This brings us to the next topic.

C. Analysis of the recognitive consciousness. In the wide application of the term 'organic' here employed the analysis of the recognitive consciousness into its elements is only one problem in the group just discussed. But historically it has always claimed a separate interest, and we may treat it so here. The question is a simple one. Yet it is proving to be very difficult to answer. No doubt a large part of that difficulty is due to the fact that it is an organic complex, which as a class is hard to analyze. On the other hand, memory analysis has gone far enough to suggest that perhaps much of our difficulty is self-imposed, is a result of approaching the analysis with largely erroneous conceptions, arrived at through *a priori* speculation instead of serious introspective observation. Perhaps we shall find in the end that memory possesses no such separate, definitely marked-off function, mediated by such definite and characteristic species of mental content as we have postulated. I need not go into the history of the problem. We all recall the various analyses that have been made of the recognitive consciousness. How it has been reduced to different unanalyzable elements, or given up as an unanalyzable complex, and the problem reopened again with new suggestions as to its nature.⁷ We evidently need more serious and prolonged actual observation on the actual process of recognition. Since the Höffding-Lehmann controversy a few serious attempts at introspective analysis have been made. From the results obtained we have no grounds for discouragement.

⁷ For reviews and discussions see especially the articles by Lehmann and by Höffding in the *Philosophische Studien*, and in the *Vierteljahrsschrift für Wissenschaftliche Philosophie*, 1890; two articles by Gamble and Calkins in the *Zeitschrift für Psychologie und Physiologie der Sinnesorgane*, 1903; Washburn, in the *Philosophical Review*, 1897; Bentley and Whipple in the articles cited above.

III. *The functions of the elements in the memory consciousness.*—By this I do not mean the general function of memory as serving one purpose of consciousness, but the functions of the different memory contents as serving different purposes in the memory consciousness. In their discussion we may follow the order already given and consider the functions of the special sense images and of organic factors (A) in recall and (B) in recognition. The suggestions presented here are borrowed largely from a number of questions that a recent study in memory analysis has given rise to.⁸

A. In recall. In a large share of our thinking we have not the choice of recalling objects in terms of one of several different classes of images. We must recall a certain aspect of an object, and we have a direct need of only this one class of images. It is in this circumstance that we must now consider the function of associated images in the recall of the particular class of images needed. Let me call the latter the primary, and the associated images the secondary.

(1) Associated special sense images. First, then, what part do secondary special sense images play in the recall of the primary? Their presence at all as a means to recall indicates a round-about way in the methods of the mind in reaching its object. It would be mental economy to eliminate all secondary, associated images, and proceed in all cases directly to the primary. That the facts are otherwise points to a difference in inherent spontaneity of images. If the primary images needed less for their arousal short cuts would be more easily established. But this aside. The present general problem breaks up into the several questions that concern the relation of the different sense departments to each other with reference to the degree in which secondary special sense images enter to mediate recall. For evidently, from what we know already, their rôle in recall depends in the first place on the sense department to which the primary belong. We assume at this point that when the secondary images appear *before* the primary are recalled their function is that of mediating recall. We shall see later that when they appear *after* the primary are recalled they may still serve a purpose.

(2) Organic factors. It is not usually held that organic images, if such there be, ever mediate the recall of special sense images. It has been suggested that in the presence of certain moods organic factors seem to mediate the production of the latter. Popularly expressed, an emotion 'feeds upon itself.' But in this the organic factors are regarded as sensations, and, moreover, as aroused invol-

⁸ See 'On the Analysis of the Memory Consciousness. A Study on the Mental Imagery and Memory of Meaningless Visual Forms,' *Psychological Review*, 1906.

untarily, as due to some physiological condition over which we have no control. If organic factors are aroused voluntarily we have first the problem of determining whether their relation to special sense images is the same in memory as it is in the original emotional experience, and what the rôle of each is in memory. This much concerns, roughly speaking, the memory of the emotions. We have a more definite indication of organic factors playing a part in the memory of perceptive experience. Studies like those of Bentley and Whipple have already shown that certain ones of them mediate recognition. From my results I am able to add the suggestion that certain others, or perhaps quite similar ones, may enter to mediate the recall of special sense images of perceptive experience.

B. In recognition. (1) Special sense images. When associated special sense images appear *after* the recall of the primary images they may do one of several things. Whether they are from the same or from a different sense department from the primary, their nature and that of their recognitive sanction may be such as to reinforce the recognitive certainty of the primary. They are not, however, as Lehmann's contention has been, the sole condition of recognition. Secondly, the entrance of associations may leave the memory sanction of the primary unaffected.⁹ Thirdly, the associations may be of such a nature as to contradict the primary image, resulting in uncertainty. These three functions of associated images were definitely established in the study on the memory of meaningless visual forms, the associations being in this case largely verbal descriptions. It would be of no small interest to follow out these suggestions and determine the relations of associated images to the primary throughout, when the latter belong to different sense departments.

(2) Organic factors. The determination of the function of organic factors in recognitive consciousness awaits entirely the analysis of the latter. We are in no position to do any more than to make some crude guesses, but these suggest that possibly our whole view of recognition needs fundamental revision. It was stated above that perhaps in the end we might find that the mind possessed no such unique function mediated by such unique species of mental content as we have supposed to be the case in recognition. Carrying out this position further, we may note some distinctions. (a) We say that we 'recognize' an image as correct or as incorrect; recognition in each case, but apparently different in constitution. (b) We call it recognition when we have reached a so-called memory result over the road of rational inference as well as when it is a direct memory result. Even the identity or the difference in recognitive

⁹ See the articles by Gamble and Calkins on these points.

states is here a problem. (c) In the complex course of recall there are different emotional reactions which seem to approach the nature of recognition, but are yet distinctly different. We 'feel' that we are 'moving in the right direction' or in the wrong, and we respond differently to the feeling in directing the course of our efforts. (d) Grouping these various things together under organic reactions that are of a recognitive nature, we find that in the actual process of recall they seem to enter as associative links in producing special sense images as well as serve the function of judging their correctness. These things, if we could take them for established facts, remain rather far from being in harmony with the view of recognition as unique in structure and in function, and still farther from being in harmony with the view of memory as reproduced special sense images plus recognition in the usual sense. Here, certainly, are problems enough.

IV. *The nature and causes of memory illusion.*—Recent studies¹⁰ on the degree of normal memory illusion have revealed the significant fact that this amounts in the rough average to about twenty per cent. of the statements made from memory under conditions that approach those of every-day life as nearly as is possible in the experiment.¹¹ A supplementary line of investigation, which seems to me of equal significance to this quantitative determination by objective methods, is the introspective study of the nature and causes of normal memory illusion. Their study has the promise of doing much for the understanding of our memory consciousness. The immediate introspective account of the subject on how he reaches a memory result gives us one method. His verbal or pictorial descriptions, treated as objective results, allow an analysis which in a large share of instances shows at once the factor that has been at work in producing memory illusion, and gives another method. The two means combined give us an encouraging outlook in this field. We have some suggestions on the causes of memory illusion. They give us a considerable additional insight into the ways in which one may arrive at a so-called memory result, the methods of memory. The first is inference. We infer much from what we remember directly, and regard the whole as a memory product in our naïve thinking.¹²

¹⁰ See chiefly articles in the *Beiträge zur Psychologie der Aussage*, Vols. I. and II., edited by Stern.

¹¹ A review of these studies is given in the *American Journal of Psychology*, 1905.

¹² Stratton has pointed this out, and further that in the growth of our knowledge we are becoming less and less dependent on personal memory for a knowledge of the past. The principle that he brings out has, it seems to me, even a wider application in so-called memory processes than his account of it here indicates. See his 'Experimental Psychology and Culture.'

Secondly, a large portion of memory error is due to influences that may be grouped under that of habit. We remember things as we have been accustomed to experience them. The individual characteristics, then, of particular things give rise to memory illusions.¹³ Thirdly, esthetic influences enter memory constructions. We remember things in the ways that are most pleasing, and thus in particular instances deviate from the facts.

These suggestions stand in close relation to some of the preceding. But they can serve as a starting-point of more or less independent directions of study that will contribute to the general result. The psychological methods by which one comes to believe that a thing is as he has stated is not readily detected in introspection even by the trained subject. The memory illusions offer a line of approach to the analysis of memory methods, to the possibly various ways in which the so-called recognitive consciousness can be aroused.

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THE NATURE OF EXPERIENCE

THE recent discussion of the subject-object relation, particularly that by Professor James in the article 'Does Consciousness Exist,' has a metaphysical bearing whose full significance has not, it seems to me, been grasped. Consciousness-in-general of the Kantian tradition made current an abstract and vaguely impersonal treatment of experience which gracefully avoided the more difficult problems of the relation of the individual to other individuals and to the universe. As Riehl points out, the transcendental ego, the subject, is logical, not actual; timeless, not undergoing change. Consequently, by a process analogous to the transference of feeling, experience lost its concreteness and took to itself the grayness of abstraction, nor was this much remedied by the term 'organic' so frequently applied. The question asked by the tyro in philosophy, Whose experience? was looked upon as the sign of the uninitiate. It is this question, however, that personal idealism, casting aside all shame, is asking.¹

Disregarding, then, a logical approach to metaphysics such as

¹³ This was suggested first by Leuba, 'An Instrument for Weber's Law, with Indications of a Law of Sense Memory,' *American Journal of Psychology*, Vol. V.

¹ It is interesting in this connection to contrast T. H. Green and such writers as James in the article, in this JOURNAL, 'How Two Minds Can Know One Thing,' and Gibson in 'Philosophical Introduction to Ethics,' especially lecture VIII.

that used by Bradley and Taylor in the principle of contradiction, as tending to the neglect of this most vital of all problems in its blindfold plunge into experience-in-general, there remains another line of argument used, secondarily by Bradley² and Taylor,³ and essentially by Strong, that of the relation of individuals to each other. It is on this pathway that a new light has recently shone due to the illuminating analysis of the nature of consciousness and the definition of the physical and psychical. First of all, then, what is an individual?

It seems incumbent upon us to recognize with social psychology that my experience and my self have not the same extension. At times the self may be more dominant and absorb, as it were, more of experience into itself, but it can never engulf all without destroying itself.⁴ The self seems, therefore, to be but one fact in my experience, though, naturally, the most important one in my ordinary practical life. Other selves and even things may become the centers of interest for other moments. Suppose I have been wondering what a friend thinks of a certain topic. Coming to a decision, I express a judgment of the same general nature, as judgment, as that in which I refer an attribute to my house. The processes are logically similar, though in the one case the thing referred to is largely perceptual, in the other largely conceptual. Both thing and person, moreover, I regard as possessing capacities and potentialities, *i. e.*, I make them centers of relation to myself. The house has the properties of resistance to the wind, of inflammability, etc.; the person has a capacity of choice, desire, movement. There is nothing more mysterious in the one case than in the other. Do I project this self into another body? Does it exist in my head and, then, find reference to a material thing? By no means. I must begin my experience perceptually always. The difference lies in the fact that this particular focus of my experience can from its activity (going beyond the thing in movement and social relations) associate with itself a complex concept like that I form of myself. I am actively constructive, however, with regard to both things. The question of a logical inference from identity of body⁵ or of instinct⁶ finds its solution here. The mind-body dualism arises contemporaneously in my thought of my self and of other selves. Both grow up as psychophysical organisms on the same footing, and both remain such in the actual business of life. I react to the person, as a whole, mind and body; sometimes

² 'Appearance and Reality,' Ch. XXI.

³ 'Metaphysics,' Bk. III., Ch. II.

⁴ Bradley, *op. cit.*, Ch. IX.

⁵ Bradley, *op. cit.*, Ch. XXI.

⁶ Strong, *op. cit.*, Ch. X.

with more attention to the one, as in a foot-race, sometimes more to the other, as in a competitive examination; but with neither, at any time, totally excluded.

The question is raised by these writers, How can I leap the gap from one stream of consciousness to another? Partly, this can be answered, by pointing out the genetic fallacy as I did above. There is, however, a deeper question involved here.

The psychologist has a stream of consciousness in which everything is considered psychical.⁷ Two positions may result, (1) dualism, (2) solipsism. In the one, we wonder how we can get to things in an external world. In the other, we are cut off from other selves. This psychological standpoint is responsible for many errors in logic and metaphysics. Mr. Bradley's logic is vitiated by it. His psychical existences are false creations of this fallacy. Professor Strong's book, to my mind the most serious and most illuminating book in present-day metaphysics, is also distorted by it, but to a less extent because he has the true instinct of the realist.⁸

It is ordinarily maintained to be possible to make everything psychical, but not everything physical. The psychical is omnivorous in a way that (*pace* materialism) the physical can not be. I would deny this power of reducing everything to psychical terms. This assumption results from the stream-of-consciousness fallacy which goes back to Kant's inner sense. It also comes from a wrong conception of identity, an identity of content and not of function.

Physiological psychology parallels perceptual qualities by sensations, and the psychical becomes a sort of duplication of the physical, sensations, of qualities. The realism of Hobhouse is justified as a revolt against such a subjectivism; I refer here, of course, to his theory of simple apprehension. I believe this to be the unconscious motive for his position. Perceptual qualities have so much in common with images that they, also, are identified, a distinction of function being swept aside by a static similarity of content. This would lead to a criticism of Professor James's radical empiricism, where a difference of function is made into a static difference of associates. I would refer to the work of Professor Dewey in this connection, for I am largely indebted to him.

Once again, this problem of the relation of selves is further complicated by a confusion of the self and the subject. It is this that makes the fallacy of the so-called states of the self. In our usual scientific reflection, we have experience-in-general, *i. e.*, a more or less impersonal attitude.⁹ But this impersonal attitude is hard to

⁷ James, 'Principles of Psychology,' Ch. IV.; Strong, 'Why Mind has a Body,' Ch. IX.

⁸ *Cf.* Chs. X. and XI.

⁹ *Cf.* Baldwin, 'Genetic Logic,' Ch. XI.

maintain when we are not outward-looking. Accordingly, we have the subject, the 'I breathe' of James, identified with, or rather immersed in, the self. This, also, gives solipsism. Ordinarily, we have two sorts of relations in consciousness, (1) knower-known or subject-object, (2) the contrast relation between the self and other selves. In solipsism of this kind, the subject with its objects of experience is identified with the self and, then, takes the contrast-relation with other selves. Yet solipsism is always regarded as foolishness, and rightly so, since persons must be reckoned with to understand ourselves. The contrast relation can not be ignored.

But we are not out of the labyrinth yet. We still have the fallacy of introjection to face. The mind-body dualism is an artifact produced by introjection also. That this, first clearly distinguished by Avenarius, has been important in the development of what Baldwin calls the 'substantive mode,' seems indubitable. The usual exposition gives the *common object*, *e. g.*, the sun, as causally connected with a perceptual brain state, and somehow floating unattached is an image representing the common object. This leads to the grossly representational theory of knowledge. But it is only with the greatest difficulty, even involving distortion of the facts, that such a view can be applied to the individual himself. This perceptual image we postulate in another's mind is not noticed by ourselves. We simply perceive the object. As Strong, among others, has well pointed out, to consider this perceptual object as causing our percept involves a vicious circle.

If my analysis is correct, the mind-body dualism has faded, and I can again ask the question, What is the individual? My experience, then, includes both the physical and psychical in functional relation to each other. *This relation is not causal.* Added to this is the assertion by science of a relation of our consciousness and our organism. I use consciousness in the sense No. 6 of Dewey's definitions.¹⁰ The brain develops gradually by a process of cephalization or central control, concurrent with which is the increase of intelligence. Neurology has apparently discovered that consciousness arises only in a circuit of five neurones and involves the Golgi cell, type II. My last card and my strongest is, however, an *appeal to death*. Philosophy, says Plato, is a meditation on death. Here Locke's query about sleep might be quoted. This shows I am making a frank appeal to functional psychology as advanced by Professor Angell, and to the theory of evolution as Professor Strong does.

Now human beings function ultimately only through their organisms. There is no other means of communication, so far as known. Hence the functional relations of psychophysical organisms are en-

¹⁰ This JOURNAL, Vol. III., No. 2.

tirely shadowed forth in this way. From our analysis we have two seemingly basal facts: (1) selves do not exclude each other; (2) things have relation to one another. Now comes the crux of metaphysics—the question of the relation between individuals and, involved in this, the further question, how two minds can know one thing. Pausing for a moment to count our resources, we find: (1) the relation of the foci of my experience differs correspondently with the relation of things and psychophysical things; (2) with the extrusion of a mysterious transcendental ego or consciousness as a structural entity, everything in experience can be expressed functionally. Our consciousness is, then, a function of the total stress relations of that node or focus in the universe usually denominated the psychophysical organism. This focus or ganglion and its complexity are the product of evolution and must not be looked upon as either merely psychical or merely physical. To do so would involve the false abstractions of materialism and panpsychism. This seems to me to satisfy the claims of realism for more than our consciousness and science for the vast realms of energy lately revealed.

Finally, epistemology must reckon with evolution, for only thus can it explain common knowledge by similarity of organization and relationships. The identity involved in the common object must be interpreted functionally, *i. e.*, similar organizations in similar relations will have functionally identical experiences. The old static identity of content will hold only within each individual's experience, and even then only partially. In short, different individuals can not have experiences in any sense numerically identical. In such a realistic metaphysics the fundamental categories would seem to be process, organization, differentiation, tension and node or focus.

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DISCUSSION

THE MADNESS OF THE ABSOLUTE

ONE of the facts about the universe which should be most distressing to moralists and enthusiasts for 'disinterested' knowing is the difficulty of getting even philosophers to think exhaustively about the logical alternatives and consequences of their theories. Of these there are always multitudes which no one ever examines, because they are not conducive or agreeable to the interests of the human kind, or even to the partisan interests of particular thinkers. And so when any one tries to fill up one of these logical gaps, his

motives are at once suspected. It is almost as saddening to observe the tendency to treat the alternative 'jest or earnest' as completely disjunctive, as though true words could not be spoken in jest, or the psychological frivolousness of an objector were incompatible with the logical seriousness of an objection.

And though I highly appreciate the amiability and good temper with which Professor Gore introduces the strictures of his 'monist' on my attempt to work out some neglected implications of idealistic monism,¹ I can not but think his *protégé* open to criticism on both these counts. He evidently will not credit me with a desire to understand what monism really means, but suspects me of privily arguing in favor of pluralism. But even if I were incapable of taking a 'disinterested' logical interest in the monistic hypothesis, need I be suspected of the insanity (far surpassing that of any absolute) of advocating pluralism? Surely I must know my philosophic colleagues well enough by this time to be convinced that so far from trying to understand what pluralism means, they are not yet even willing to listen to argument on the subject. It would consequently be sheer waste of energy to argue the matter, and as I did not attempt this, the *tu quoque* of Professor Gore's monist, to the effect that there is madness also in the pluralistic universe, does not hit me. Even if it were sound, it would only show that on either hypothesis madness was rampant throughout the universe.

It occurs to me, however, that even on this amount of agreement an irenicon might be based. Both the antagonistic schools of philosophy might recognize the poet's insight, and assent to Shakespeare's dictum that it is 'a mad, mad world, my masters'! Or, if such agreement of philosophy with genius should prove impracticable, it would be solely because no pluralist need assent to this conclusion on the strength of an argument vitiated by so many serious flaws as that of Professor Gore's ingenuous monist.

1. For example, he appears to think that the admission that there is madness in the universe must be just as objectionable and fatal to pluralism as to monism. But this would hardly seem to be the case. On the monistic hypothesis no quality can be ascribed to any part of the whole without at once qualifying 'the perfect whole.' The madness, therefore, if it exists at all, must vitiate the fundamental nature of things and so essentially pervade them all. But in the more loosely-knit universe of pluralism, this by no means follows. The universe may, like the curate's egg, be good *in parts*. The defects in some parts need not at once corrupt the others. And so I may preserve my sanity, however wildly you may rave. Nay, as the universe has not any all-pervading character, it may change its

¹ See this JOURNAL, Vol. III., Nos. 18 and 21.

nature by outgrowing its defects. From being predominantly wild, disorderly and insane, it may become sober, orderly and rational, by the elimination of its turbulent components.

2. It is hardly true that the absolute was called mad simply on account of its dissociated condition. It is not 'mad only in so far as pluralistic.' To a pluralist the plural condition will seem eminently rational, and would certainly form no ground for a charge of madness. Even to a monist there is no reason why dissociation should mean madness. It might even be a superior condition to undifferentiated unity. The trouble in this case is quite empirical in its origin. It proceeds from the *de facto* character of the plurality into which the absolute has unhappily got itself dissociated. The dissociated absolute is not, alas! a model of harmony. And it is this which leads one to doubt whether the absolute is *compos mentis*.

3. Our ingenuous monist is, nevertheless, loth to despair of the absolute. He thinks that it may still stand for a principle of reunion, and our aspiration towards it may mean 'the quest for sanity, wholeness, health' which will heal the insane warring of the dissociated 'many.'

Truly a beautiful idea, which we should eagerly adopt, if only the analogy would let us. But according to the analogy it is not we, the products of the dissociation, who are mad (at least not all of us), but the dissociated whole, the absolute itself, to which we are told to look for a cure. If this is the best we can do, 'the quest for sanity' by way of absorption in the absolute seems doomed to end in disappointment. Even though, therefore, 'it behooves the absolute to be sane,' this counsel of perfection hardly accords with 'the analogy of dissociated personality.' Nor is it clear how we, by desiring the reconstitution of its shattered unity, can bring about a reversal of the process to which we owe our being.

There even seems to be hereabouts a certain confusion between the theoretical *thinking* of the absolute as a unity and the practical *making* of it into such a unity. The first is easy enough, mere child's play; the second seems impossible. And our analogy distinctly frowns upon such gratuitous impertinence. Shall we presume to say that in disintegrating itself the absolute has erred? For all we know it may have vastly bettered its condition. And why in any case should we strive to reunite what *ex hypothesi* it eternally embraces? And how can its own dissociations restore its unity? Miss Beauchamp was cured by the astute manipulations of Dr. Morton Prince; but who can get outside the absolute and operate upon it similarly?

I myself, indeed, have long suspected that idealistic philosophy might be, as Professor Gore's monist suggests, a 'trance of the

human spirit,' and have essayed to promote its awakening. But even though one could arouse the human spirit from its lethargy, one can not see how this would help the absolute or break the cosmic slumbers of the 'Red King' in whose nightmare all are figures and must cut their willing or unwilling capers.

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REVIEWS AND ABSTRACTS OF LITERATURE

Adonis, Attis, Osiris. Studies in the History of Oriental Religion. J. G. FRAZER. London and New York: The Macmillan Co. 1906. Pp. xvi + 339.

This is the second foretaste of the coming third edition of the 'Golden Bough,' and is, the author tells us, an expansion of the corresponding sections of the latter work.

As compared with the first series of studies destined to be incorporated in the new edition of the 'Golden Bough,' the 'Lectures on the Early History of the Kingship,' published last winter, the argument in the present volume is conducted with more reserve, and the conclusions are advanced with more caution. Mr. Frazer's thesis is that the oriental religions here studied are based upon harvest rites which were intended to insure the fertility of the soil by methods of imitative magic. In the 'Lectures on the Origin of the Kingship,' the author advanced the theory that the monarch of historical times is derived from the magician or medicine-man of tribal society, one of whose most important functions is to bring or avert rain, and otherwise control the fate of crops and herds. Eventually, however, the confidence in magical rites as effective to control climatic conditions was replaced by a belief in some more profound and mighty cause, manifesting its power in the changing aspects of nature. Not nature herself, but this *numen*, was now more or less responsive to petition and influence, and the worshippers 'now pictured to themselves the growth and decay of vegetation, the birth and death of living creatures, as effects of the waxing or waning strength of divine beings, of gods and goddesses, who were born and died, who married and begot children, on the pattern of human life' (p. 3). "Indeed they commonly believed that the tie between the animal and the vegetable world was even closer than it really is; hence they often combined the dramatic representation of reviving plants with a real or a dramatic union of the sexes for the purpose of furthering at the same time and by the same act the multiplication of fruits, of animals and of men" (p. 5). Accordingly, it is not unlikely that the kings of Byblus (the Mecca of the Phœnicians) assumed the title of Adonis or of Baal, and were required to mate with the goddess, the Baalath or Astarte of the city. If this were so, and Mr. Frazer's evidence, though slight, is very persuasive, it is clear that the king is the medicine-man enthroned, which is precisely the author's theory.

The chief deity of these religions of western Asia in their earlier stage would seem to have been a female deity—Astarte, Aphrodite. And Mr. Frazer believes that 'a great mother goddess, the personification of all the reproductive energies of nature, was worshipped under different names but with a substantial similarity of myth and ritual by many peoples of western Asia; that associated with her was a lover, or rather series of lovers, divine yet mortal, with whom she mated year by year, their commerce being deemed essential to the propagation of animals and plants, each in their several kinds; and further, that the fabulous union of the divine pair was simulated and, as it were, multiplied on earth by the real though temporary union of human sexes at the sanctuary of the goddess for the sake of thereby ensuring the fruitfulness of the ground and the increase of man and beast' (p. 23). This latter custom, which prevailed in Cyprus and in many parts of western Asia, was not regarded as an orgy of lust, but rather as the performance of a serious religious duty. Its fulfillment (with a stranger) was a necessary preliminary to marriage, and it seems natural to suppose, although Mr. Frazer has not suggested it, that this was the way to win the benediction of the goddess of motherhood. Women who became temple harlots, either for life or for a term of years, 'were invested with a sacred character, and their vocation, far from being deemed infamous, was probably long regarded by the laity as an exercise of more than common virtue' (p. 25).

In the present volume not so much is said about the periodical killing of the man who impersonated the divine consort. And the celebrated interpretation of the death of Christ is wholly omitted. The phenomenon of burning the god is, however, narrated at length. Thus is explained the tale of the death of Hercules, identified by the Greeks with the Tyrian Melcarth. "For on many a beach and headland of the Ægean, where the Phœnicians had their trading factories, the Greeks may have watched the bale-fires of Melcarth blazing in the darkness of night, and have learned with wonder that the strange foreign folk were burning their god" (p. 39).

Since the ritual of Adonis seems to have been intended to stimulate fertility, Adonis was himself evidently a spirit of increase through reproduction of kind, and, for a chiefly agricultural people, naturally a 'corn spirit.'

Attis 'was to Phrygia what Adonis was to Syria,' and appears to have been a 'tree spirit.' He was paired with Cybele, another goddess of fertility, and was honored in a ritual which, while it had evidently the same purpose as the rites of Adonis, was more primitive and barbaric.

It would seem as though the harvesting of the grain should bring satisfaction and hope, but the Egyptian farmer felt bound to put on an air of deep melancholy, to beat his breast and call upon Isis, whose task it was to bring back to life the slain god Osiris. Like Adonis and Attis, Osiris died and was mourned, rose from the dead, and brought joy and hope to his worshippers. His companion Isis was presumably in the beginning, like Astarte and Cybele, the more important deity, pointing thus to a stage of society in which descent was traced and property handed down through women. And the service of the god who rose annually

from the dead brought a promise of immortality to him who was initiated into the mystery.

Such a book as this ought to be of very great value to the student of the history of philosophy, for it was the blending of these eastern faiths with Neo-Platonism which formed the soil out of which Christianity arose. Mr. Frazer is always ready to insinuate the indebtedness of Christianity to this or that eastern cult. It is a real pity that he, or some one with his information, does not tell in detail the story of that indebtedness. There is much in the recent volumes of Professor Dill, but in his case doctrinal attachments seem to have stood in the way.

Mr. Frazer writes with rare literary skill. It is to him a matter of profound regret that he has been unable to visit the homes of the oriental religions here studied. The evidence in support of his conclusions is confessedly slight and often ambiguous, yet, as presented, it is surprisingly effective, and may well stimulate a lively interest in the coming edition of the 'Golden Bough.'

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Outline of the Vedānta System of Philosophy, according to Shankara.

PAUL DEUSSEN. Translated by J. H. WOODS and C. B. RUNKLE. New York: The Grafton Press. 1906. Pp. viii + 45.

This small volume is a translation of the outline of the doctrine of Shankara originally forming a part of Deussen's 'System des Vedānta.' Deussen's work on the Vedānta, now more than twenty years old, still, of course, remains authoritative; and the name of Dr. Woods, who has studied the Hindu systems with Deussen at Kiel as well as with native pundits in India, is a sufficient guaranty of the accuracy of the rendering both of the German and of the Sanskrit technical terms. It will be a convenience, especially to those who give university courses in Hindu philosophy, to have this compendium accessible in English; though it ought to be said that what we now most need from our competent specialists in the subject is not more material on the Shankaran form of the Vedānta, which has sufficiently and even redundantly been expounded in both English and German, but more translations of the texts and fuller studies of the reasonings of some of the less well-known systems of Indian thought. It would, for example, be a very useful thing if some one would prepare an English outline, similar to the present manual but somewhat fuller, of the Vedānta system of Rāmānuja—a species of 'concrete' idealistic monism that to most occidental minds must seem much more interesting than the sterile nihilism of Shankara, with its evasion of its own logical difficulties through the essentially frivolous and self-stultifying doctrine of Māyā. As a result of the Schopenhauerian enthusiasm of Deussen and of the propagandizing zeal of the Hindu disciples of the influential ascetic teacher Rāmākrishna, the extreme abstract version of the Vedāntic monism has come to enjoy an undue monopoly of attention, as the sole typical example of Indian pantheism and the only possible interpretation of the teaching of the Upanishads

and of the Vedānta Sūtras. The rival system of Rāmānuja deserves to be better known, if only because of its similarity to the doctrines of certain of our English and American Neo-Kantians. Even Shankara, when he is less bent upon emphasizing the negative side of his metaphysics, often writes sentences which might be mistaken for excerpts from the 'Prolegomena' of T. H. Green; *e. g.*, "Although one and the same self is hidden in all beings, yet owing to the gradual rise of excellence of the minds which form its limiting conditions [Scripture declares that] the self, though eternally unchanging and uniform, reveals itself in a graduated series of beings and so appears in forms of various dignity and power." But Rāmānuja is something very like an oriental and twelfth-century prototype of Professor Royce, vigorously refuting the blank negations of metaphysical mysticism and finding the ultimate reality in a 'self of all the world' having 'knowledge for its essential nature,' of which all beings are real modes or parts, though it is itself 'free from all shadow of imperfection, comprising within itself numberless auspicious qualities, immediately realizing all its purposes.' We now, fortunately, have a satisfactory translation of Rāmānuja's commentary on the Vedānta Sūtras, by Thibaut,¹ but it is probable that few savè specialists will make their way through the eight hundred painful pages of that work. I venture, therefore, to express the hope that the translators of this volume will complement their present service to the study of Indian philosophy by similarly popularizing Rāmānuja. And to Dr. Woods's special competency and exceptional training in these studies one hopes that we may some day be indebted for the much-needed historical and critical survey of Indian philosophy—a survey which will deal with the Hindu systems from the standpoint of occidental problems, will treat them as contributions to technical philosophy rather than to theosophy, and will remember that an illuminative analysis of the reasons which lead a philosopher to his conclusions is usually much more important and profitable than even the most accurate exposition of those conclusions. There is, in both Shankara and Rāmānuja, not to mention other systems, a great mass of interesting and instructive reasoning about questions which still engage the attention of philosophers—about the nature and meaning of consciousness, about the relation of subject and object, about the paradoxical subtleties of self-consciousness. These reasonings are entirely capable of statement in intelligible occidental terms, and of profitable comparison with modern and even contemporary reflection upon the same subjects. Such a statement and such a comparison would be a noteworthy contribution to philosophy itself, as well as to the mutual understanding of East and West.

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¹ 'Sacred Books of the East,' Vol. 48, 1904.

Ueber eine besondere Klasse abstracter Begriffe. M. RADA KOVIC. *Zeitschrift für Psychologie und Physiologie der Sinnesorgane*, June, 1906. Pp. 1-9.

The notion of the limit was successfully used in mathematics a considerable time before the necessary and sufficient conditions of the existence of a limit were known. This fact suggests the view that the notion of the mathematical limit is the product of a process of thinking used also in other fields of work, and that the acquaintance with this notion acquired elsewhere could be used in mathematics. It is important to study this process of thinking because from its application there results a new class of abstract notions. In finding the limit of the function $F(x) = y$ for $x = a$ the numbers y are arranged in a well-ordered series, and from this series the existence of another number is deduced which may or may not belong to the series, but which can be determined from it. This determination can be performed if one is able to recognize from the order of the numbers y a certain other number which they approach if x approaches a indefinitely. Abstract notions belonging to a certain type may be constructed in a similar way, as, *e. g.*, the notion of the straight line and of empty space. The empirical representatives of straight lines are rods, *i. e.*, bodies one dimension of which is so considerable that the other can be neglected. All rods of the same length may be arranged in the order of the size of their cross-sections. This series has no last term, because no matter how small the cross-section of a body, we can find another of still smaller size; this series is well defined because there is a rule according to which we can determine whether any object belongs to the series; and the series is well ordered because we can determine of any two terms which one comes first in the series. This series determines a new notion, that of a straight line. In a similar way we may arrange bodies of decreasing density and determine the value of certain constants for the terms of this series, *e. g.*, the velocity of light. Thus we obtain a series of numbers which corresponds to the velocity of light in bodies of decreasing density. These numbers approach a certain limit which corresponds to the velocity of light in the body of the density zero, *i. e.*, in empty space. Abstract notions of this class are derived from empirical objects by means of the following rules: (1) Attributes which are attributes of every term of the series are attributes of the abstract notion. (2) Attributes regardless of which the series was ordered are not attributes of the abstract notion. (3) Attributes which admit of quantitative variation and which vary in such a way that the numbers representing these quantities form a series the terms of which approach a certain limit, are attributes of the abstract notion, and the limit of the series gives the number characterizing the quantity. A corollary of this principle is the proposition that attributes which belong to the objects in always decreasing amount approaching the limit zero are not attributes of the abstract notion. It is easy to illustrate these rules by the examples of the straight line and of empty space. Abstract notions of this type are simpler than the objects of which they are characteristic. This sim-

plicity and the fact that these notions may be represented by empirical objects with any degree of approximation is the reason of their extreme usefulness. This is proved by their ample use in physics and in most parts of applied mathematics.

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JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. October, 1906, Vol. XVII., No. 4. *Jealousy* (pp. 437-496): ARNOLD L. GESELL.—Jealousy is found in the higher orders of animals and in all races of man, appearing in the child during the first year. Its function is self-protection, and especially protection of the individual against the group. An analysis of jealousy shows it to be a painful complex emotion, the most prominent elements of which are anger, grief and self-pity. It is an important factor in education and in the different social institutions, especially the family. Its practical importance is forcibly brought out by pathology and criminology. *Memory for Lifted Weights* (pp. 497-521): E. A. HAYDEN.—The results fail to show any regularly fading memory image as a factor in the judgment of lifted weights. The judgment seems rather to be based upon the nature of the motor adjustment, being 'equal' when the adjustment is just sufficient, 'less' when more than this and 'greater' when less. This is, on the whole, in agreement with the Müller and Schumann theory. *Organic Changes and Feeling* (pp. 522-584): JOHN F. SHEPARD.—The tridimensional theory of feeling as advanced by Wundt and Lehmann has no basis in organic reactions. No three pairs of reactions corresponding to the three feeling-dimensions are found, nor any difference between those accompanying agreeableness and disagreeableness. Instead it is found that: (1) all moderate nervous activity decreases the volume and pulse of the peripheral vessels and at the same time increases the volume and pulse in the brain and the rate of the heart beat; (2) strong stimuli have both an inhibiting and an exciting effect; (3) the activity of any part tends to counteract constriction of the blood-vessels of that part. *Psychological Literature. Psychiatric Literature. Index to Vol. XVII.*

Bierer, Everard. *The Evolution of Religions*. New York and London: G. P. Putnam's Sons. 1906. xv + 385.

Bruno, Giordano. *Opere Italiane. I. Dialoghi Metafisici*. Con note di Giovanni Gentile. Bari: Gius. Laterza & Figli. 1907. Pp. xxii + 418.

De Montmorency, J. E. G. *Thomas à Kempis. His Age and Book*. New York: G. P. Putnam's Sons; London: Methuen & Co. 1906. Pp. viii + 312. \$2.25.

NOTES AND NEWS

IN accordance with the announcements already made, the American Philosophical Association and the American Psychological Association met in affiliation with the American Association for the Advancement of Science and the American Society of Naturalists at Columbia University, in New York City, on Thursday, Friday and Saturday, December 27-29, 1906. Addresses were made by the retiring presidents, Professor James addressing the Philosophical Association on 'Men and their Energies' and Professor Angell the Psychological Association on 'The Province of Functional Psychology.' On Thursday evening a reception was given by the President and Trustees of Columbia University in Earl Hall, followed by a general smoker to the visiting societies at the Faculty Club. The annual dinner of the American Society of Naturalists, on Friday evening, was followed by a joint smoker of the two associations at the Faculty Club. On Saturday the President and the Trustees of the College of the City of New York entertained the two associations together with the visiting societies at luncheon in the new buildings of the College, on Amsterdam Avenue and 138th Street. In connection with the other visiting societies the two associations enjoyed the hospitality of the Trustees of the American Museum of Natural History at a reception on Saturday evening. A scientific exhibit of unusual importance and the ceremonies attending the unveiling of ten marble busts of pioneers in American science added to the interest of the occasion. Officers for the ensuing year were elected as follows: For the Philosophical Association—President, Professor H. N. Gardiner, of Smith College; Vice-president, Professor R. B. Perry, of Harvard University; Secretary-treasurer, Professor Frank Thilly, of Cornell University; new members of the Executive Committee, Professor Ernest Albee, of Cornell University, Professor C. M. Bakewell, of Yale University, and Professor H. G. Lord, of Columbia University. For the Psychological Association—President, Dr. H. R. Marshall, of New York City; Secretary-treasurer, Professor W. H. Davis, of Lehigh University; new members of the Council, Professor C. H. Judd, of Yale University, and Professor W. B. Pillsbury, of the University of Michigan. A detailed report of the meetings may be expected in subsequent numbers of this JOURNAL.

For the following item, and the one succeeding it, we are indebted to *Nature* for December 6: "By the death of Emil Schmidt in his seventieth year a typical German anthropologist passes away. Like many of his fellows he studied medicine, and was actually in practise for some twenty years. He first directed his attention to American archeology and dealt in particular with the Copper age. His anatomical knowledge led him to take up physical anthropology, and he possessed a considerable collection of skulls, now in the Anatomical Institute at Leipzig, where he was for a time a recognized lecturer, and later extraordinary professor. He was among the first to study the human remains at Pompeii, and a stay in Egypt enabled him to make a further study of early historic material. Some years later he visited India and Ceylon; the whole of the

material which he then collected was not published, but his 'Reise in Sued-Indien' and 'Ceylon' contain much valuable information. In the much-discussed problem of the Neanderthal skull he accepted, in opposition to Virchow, the view that it is really that of a lower human species or genus; in the question of prehistoric pigmy races, on the other hand, he held that more evidence was needed as a basis for Kollmann's speculations. In consequence of failing health he resigned his professorship in 1900, and occasional contributions from his pen appeared in *Globus* and other papers, but he knew that his life's work was done, and was seldom seen in scientific circles."

"The origin of species, more especially in connection with variation and Mendelism, forms the leading feature of the issue of *Verhandlungen der Schweiz. Naturfor. Gesellschaft* for the present year. The articles on this subject relate to the evolution of species generally, Mendelism as exemplified by hybridizing garden and other snails, variation in butterflies, mutation in the harts-tongue fern, and species-formation among bacteria and parasitic funguses. In the case of the garden snail (*helix hortensis*) Dr. Arnold Lang shows that by crossing members of uniformly yellow-shelled colonies with the fully-banded strain it will be found that the progeny follows to a great extent the Mendelian law in regard to the numerical proportions of the various color-phases. The issue concludes with a number of biographies of scientific men, accompanied by portraits."

DR. SHEPHERD IVORY FRANZ, of the McLean Hospital, Waverley, Mass., has accepted the positions of psychologist in the Government Hospital for the Insane, Washington, D. C., and of professor of physiology in the Medical School of the George Washington University.

PROFESSOR E. H. SNEATH has been granted an extension of his leave of absence from Yale University. One of his courses will be conducted by Dr. Paul Monroe, professor of the history of education at Teachers College, Columbia University.

PROFESSOR DIELS, of the University of Berlin, and Professor Schöne have just issued the first volume embodying their researches in the history of ancient medicine. The present volume treats of Hippocrates and Galen.

THE American Unitarian Association issues four addresses by President Eliot on Franklin, Washington, Channing and Emerson, in a single volume, entitled 'Four American Leaders.'

DR. HUGO MÜNSTERBERG, professor of psychology at Harvard University, has received leave of absence from November 21, 1906, to January 12, 1907, for a visit to Germany.

PROFESSOR PIERRE JANET, of the University of France, has delivered three lectures in the Johns Hopkins University on 'Mind and Medicine.'

MR. C. F. SANDERS has been appointed instructor in psychology at Pennsylvania College, Gettysburg, Pa.

THE Yale Association of Japan gave a reception, in October, in honor of Professor Ladd.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE DESIRES OF THE SELF-CONSCIOUS

THAT the capacity for morality depends upon self-consciousness has, perhaps, come to be enough of a truism to need no emphasizing. The fabric of ordinary moral experience is obviously made up of mental processes and mental contents which are simply special cases or special consequences of the power of self-representation; and only that conduct is treated as the subject of moral predicates which is ascribed to a conscious agent not constitutionally incapable of such things as self-criticism, of that self-diremption implied in the contrast between actual and ideal, or possible, attainment, of a feeling of self-origination of acts, of a contrast between self and other. Even the egoistic hedonist's judgments of expediency imply the ability to form a more or less definite notion of a perduring self, from their common reference to the satisfaction of which all the practical prescriptions which he lays down get their rational justification. The importance of the fact of human self-consciousness for ethics is more expressly insisted upon by some schools of moralists—for example, by Green and his followers,—while only casually taken for granted by others; but in some fashion or other it is by this time pretty generally recognized. Yet (but for a few praiseworthy exceptions) one does not find (so far as my reading goes) either ethical theorists or psychologists treating the subject in a way which at all matches either its fundamental significance in relation both to the moral and to the logical judgment, or its psychological complexity. One may still read recent and scholarly studies of the evolution of morality in which no express reference is made to the circumstance that it is self-consciousness that is the *conditio sine qua non* of the moral consciousness, and no account is given of the way in which and the stages through which this power developed and interacted with the other factors in human evolution.¹

¹ This inadequacy—which amounts to an ignoring of the essence of their problem—marks, for example, such well-known and important books as Sutherland's 'Origin and Growth of the Moral Instinct,' Wundt's 'Facts of the Moral Life' and Westermarck's newly-published 'Origin and Development of the Moral Ideas,' Vol. I. None of these, from the nature of their themes, can

One may likewise read analyses, otherwise highly competent, of the moral judgment and the moral emotions which entirely neglect to attack directly and systematically what one might naturally take to be their first task—the inquiry into the nature, the diverse meanings, the relations, of the consciousness of self, and especially into the way in which desire and volition are affected by its presence among human faculties. For if a psychology of the moral consciousness is the proper beginning of all profitable ethical theory, the psychological question first of all calling for consideration under that head would seem to be: How does self-consciousness affect or transform desire and impulse? What new cravings, desires, interests are characteristic of the fully self-conscious animal, in contrast with animals in whose experience this type of consciousness has not yet appeared; and what is the relation of those desires and interests to moral conduct?

I. One answer to this question is, indeed, common and familiar enough; it is that the supervention of self-consciousness makes man's choices (so far as they are really affected by it) necessarily egoistic. It was this conclusion that was taken for granted by Mr. Kidd in his once much-discussed book on 'Social Evolution.' The lower animals, it is said, though they can't properly be called unselfish, at all events have instincts (the result of natural selection) which impel them to sacrifice themselves as individual organisms in the interest of the perpetuation of the species; and these instincts they obey as blindly as any others. But man, in so far as he acts with the light of reason and with full consciousness of the distinction between himself and his interests and other selves and their interests, must necessarily be controlled by self-referring motives; though fortunately the old instincts or certain suprarational sanctions are frequently strong enough to limit or overcome this rational egoism. This theory of the necessity of self-reference—of control by some form of self-interest—in all fully self-conscious volition, is likewise assumed by the doctrine of Green and the English 'self-realizationists' in ethics, though they, of course, ingeniously contrive to avoid bringing this egoism into any conflict with 'altruism'; rational choice, for Green, not simply ought to, but actually and necessarily does, aim always at 'the abiding satisfaction of a permanent self.' This view I take to express a very inadequate consideration of the workings of self-consciousness—as I shall try to show; but altogether avoid reference to phenomena that are obviously phases of self-consciousness; but it is rather astonishing to see how casual most of these references are, and how little these writers are sensible of any obligation to deal directly and systematically with that peculiarity which, psychologically speaking, constitutes the generic differentia of the human animal and the essential 'formal' element in morality.

I can not agree with those who, going to the other extreme, would not admit that it imperfectly expresses one of the real results of self-consciousness in relation to volition. The appearance of that curious ejective construct called 'self' among the objects of thought does bring with it certain entirely new and distinctive interests and appetencies. That the materials for that construct are largely borrowed materials, and not really unique or original, Baldwin has shown us; that the content of the objectified self, of 'the me and the mine,' is in the highest degree indefinite, changeable and elusive—the artificial result of selective abstraction and varying subjective interest—James and others have shown. But it remains true that we have a conception of the self as a sum of interests, as a possessor of potential goods, distinct from the interests and the goods of other selves, through its contrast with which the 'me' acquires definition and meaning; and that these interests and goods of 'number one' tend to have a peculiar interestingness, a special power of fixating attention and arousing desire in the actual 'subjective self' of our successive moments of consciousness,² in a way that goes beyond, and is distinct from, their merely direct appeal to un-self-conscious, instinctive responses. James has observed that 'there is no reason to suppose that self-love is primarily, or secondarily, or ever, love for one's mere principle of conscious identity.' But if this means that the mere applicability of the first personal pronoun to the conceived good or satisfaction of a self does not add, and add materially, to the interestingness of that conceived good for the average man, the observation seems to contradict facts of common experience. When thinking of the self under this form of self-consciousness,— *i. e.*, when thinking of it as a sum of interests or a recipient of goods—men surely often desire certain ends, not because they would otherwise feel any instinctive craving for them, but because those ends are subsumed under the abstract class 'interests of self.' How abstract in meaning this 'mine' may become without ceasing to be effective (however illogically) as an awakener of especial subjective interest and desire may be seen if one asks in what sense the Buddhist or Hindu, in that new incarnation for the sake of which he sacrifices present goods, will be the same self. Yet he undoubtedly

² It is assumed throughout, as evident and familiar, that the active and subjective self, which involves essentially the 'attitudes' and the tendencies of attention of any given moment of consciousness, is distinguished from that abstract artefact, the objectified self, or 'me.' The point of the present paper is that the conceived interests of the objectified self are, indeed, subjectively interesting in a peculiar degree; but that in any self-representing agent the subjective interest in the objectified self as an object of approbation or disapprobation, as a subject of favorable or unfavorable predicates, is organically more fundamental, and more efficacious, than the interest in the objectified self conceived as the possessor of goods.

is (though one may reasonably ask why he should be) more solicitous about that future self which will have no memory continuous with his present stream of consciousness than he is about the well-being of other, contemporaneous selves, whose consciousness is no more completely discontinuous with his. And what may be true in this extreme case is very frequently true in ordinary cases. That it is so, however, is, I suspect, largely due to the influence of one or another form of the second general type of desire connected with the representation of self, to which I next turn. The first type would, indeed, afford material for much psychological analysis; but what I want to insist on is the fact that this sort is much less important than—and when the two come into opposition, is naturally subordinate to—quite another sort of desire with respect to the represented self.

II. The objectified 'me' no sooner emerges among the objects of thought, of frequent mental reference, than there emerges with it what may be called the 'approbative' type of interest. This appears in two familiar forms, the precise nature of which, however, needs to be carefully noted.

1. The self, as Baldwin has suggested, apparently becomes a self only in so far as it is thought, not only as contrasted as to its content with others, but also as being *for* others. At all events, whatever be the genetic psychology of the matter, in fully developed self-consciousness the self is conceived as being an object for the thought of other selves just as it is known to be (perhaps one ought to say 'remembered to have been') an object for the thought of the subjective self of certain moments of consciousness. As an object in the thought of others, it is conceived as causing certain attitudes, giving rise to certain judgments, favorable or unfavorable, approving, disapproving or indifferent, on the part of those others, just as they constantly give rise to like judgments and attitudes on its part. And, as every one knows, the self-conscious animal has a peculiarly lively interest in these attitudes, peculiarly strong desires with respect to these judgments. The idea that his objectified self cuts an ill figure as an object for those other selves is, for some reason, a painful idea; the thought of looming as a large, impressive, admired, or beloved object in those eyes is correspondingly attractive and desire-provoking. Upon this, the ordinary 'approbateness,' I do not need here to say much, though I think there is more to be said about it than has always been recognized. It is commonly treated as a rather accidental and morbid element in human nature, a desire which the moralist should reprobate in passing, but from which he can learn little; though Adam Smith once found in it sufficiently pregnant intimations both of some of the elements in the

nature of the good and of some of the deeper workings of human motive. All that it is needful to remark about this state of mind in the present connection is that what awakens interest and desire in the subjective or representing self of the moment is in this case not the representation of the objectified self as realizing any interests, fulfilling any of *its* desires, enjoying any satisfaction—but rather the representation of that self as *being* something at the moment of action or even at the moment of choice, as standing in a certain light, as the subject of certain predicates, such as ‘admired,’ ‘approved,’ ‘respected,’ or merely ‘not disapproved.’ The representation of the self in this manner is an agreeable representation, and therefore the action that is a part of that representation and the condition precedent to the bestowal of approbation, is chosen. But it is not at all necessary that the objectified self should itself be supposed to be the possessor or conscious experiencer of any future good resulting from this choice; in the classic example of action directed to the assuring of posthumous fame or to the saving of one’s ‘honor’ from stain, it is palpable that the conceived ‘self’ in question gets no satisfaction of its own out of the business. The desire involved is not the desire that the objectified self shall *get* anything in the future; it is due entirely to the present interestingness of the idea of the self as *being*, at the conceived moment of action, *describable in certain terms* implying certain attitudes on the part of other selves. And because it has this character, ‘approbateness’ belongs in the same general class of desires as the more significant type next to be considered—to the development of which in the mental growth of the individual it is apparently a preliminary stage.

2. The human individual, through the same process in which he acquires the idea of his self and of the alter contrasted with it, at the same time learns to take attitudes of approval or disapproval towards the characteristics or the acts of all selves, whether of *ego* or *alter*. How he learns this, and why he should be so constituted as to be forever approving or disapproving, we can not here stop to inquire; it is enough to note the obvious fact. A self, as actually thought about, is usually thought, and is always potentially thought, as the proper logical subject of some kind of descriptive adjectives or epithets which carry with them favorable or unfavorable connotations. It results from this that self number one—the ‘me’—may be conceived by the subjective consciousness of any given moment as belonging in the class of selves habitually approved or of those habitually disapproved, as being, in other words, approvable or disapprovable, as the legitimate subject of good or of bad predicates. And the formula for the kind of desire involved in this mode of self-representation is this: the representation of the objectified self as

possessing characters or exhibiting actions which, at the moment of the representation, are conceived as disapprovable (which, in general, are those which would be disapproved in any other self under like circumstances), is a painful representation; and the actions and characters involved correspondingly tend to be inhibited. Any representation of the ejective self (conceived as agent) in which it possesses qualities that the subjective ego does not, in the act of representing them, admire or respect, is an 'unpleasant idea'; and is therefore an idea which, in so far as it involves action, does not get attended to in such a manner as to determine choice in favor of that action.³

All this seems simple and familiar enough; yet I can not but think that two fundamentally significant facts about this type of self-conscious desire have been too often neglected. For, in the first place, if it be admitted that this kind of desire exists and plays a great part in the actual determination of human choices, it follows that not merely the hedonist's, but also the 'self-realizationist's' theory of a necessary reference in self-conscious volition to the satisfaction of the self, is wholly unfounded. The only self that must be satisfied in order that volition shall be possible is the subjective self, the active and unrepresented state of consciousness of the moment, with its actual tendencies of interest and attention; and the representation of the objectified self which (at least very commonly) so satisfies the subjective self is one in which it is conceived; not at all as a sum of interests, but as (logical) subject of approbational predicates. Here, as before, we have a desire, not that the self shall hereafter get or attain or enjoy something, but that, in action, it shall *be* something; and this desire is manifestly capable of controlling volition in our most completely self-conscious moments. How constantly controlling a motive it is in every man's experience any moderately subtle analysis not merely of one's own mental movements for the past hour or day, but of what is implied in any conversation, especially upon a moral issue, between any group of persons, will, I think, make evident. What chiefly influences deliberate human action is not the will for life or for pleasure or for power (except in so far as these are involved in the other), but the will for the good predicate for one's objectified self. The soldier can not tolerate the thought of himself as a 'coward,' therefore he flings himself into the imminent, deadly breach; the practical man may sacri-

³ Sutherland touches upon this under the head of 'Self-respect' in 'Origin and Growth of the Moral Instinct,' chap. XVI. But he represents this motive as controlling conduct through a fear of the *future* self-reproaches which would follow a breach of self-respect (II., pp. 63, 72). By thus misdating the influence of self-respect, Sutherland misses the essential point of the situation.

fice himself and others to his ambitious purposes, but he will not permit himself to 'act like a fool'; the philosopher will give up a cherished belief or a favorite practise when he comes to think of himself as 'irrational' or 'self-contradictory' in his adherence to it; and the poet who, like Walt Whitman, rather makes it a point of glory to contradict himself, still does so because 'consistency is the bugbear of small minds' and he will not think of himself as a small mind or as afraid of any bugbear. The chief end of man, it would appear, is an adjective; the ruling passion of the self-conscious animal is the pursuit of the good predicate for his acting self—the pursuit, not, indeed, of 'praise' (in the terminology of Adam Smith), but of 'praiseworthiness.'

Now much of this will probably appear strained and offensive to some; they will say that, for their part, they do not find themselves greatly concerned about the adjectives applicable—even objectively and intrinsically applicable—to their selves *in action*, that what they chiefly care about is that the ends of their action shall be such as, when realized, possess objective value. They may even urge that the former solicitude, in contrast with the latter, is the characteristic rather of the prig than of the average, normal, unpretending moral man. Such an objection is instructive because it is palpably self-refuting. To feel offended at the idea that mankind (including oneself) is chiefly actuated by the feeling of aversion from, or attraction to, certain adjectives of the self conceived as agent, is to betray the fact that one is, at the moment, quite powerfully actuated by that feeling. To maintain that only an outlooking interest in the worth of the ends of one's action is a truly moral attitude, is really to say that one regards the adjectival qualities of the self expressed through action as of more primary moral consequence than the ends of action. And if the prig is one who cares chiefly about the attributes of excellence found in the self-represented picture of his 'me,' a man is never more clearly a prig than when protesting that he is, and will be, none. But the real peculiarity of the priggish type of moral agent lies, of course, not in his being more greatly influenced by such self-representation of the qualities predicable of the 'me,' but in his tendency to be moved rather by the attractiveness of pictures of himself as positively admirable than by a spirited aversion from pictures of himself as negatively falling short of an ideal, as the potential subject of bad predicates. It is, on the whole, this negative form of the desire in question that seemingly constitutes the more usual (and one may add, the more healthy) type of moral motive in the greater part of mankind. Yet in any case the difference can only be one of degree; in any man there can hardly be lacking either the

desire for a given action arising from the representation of the self as therein approvable, or the aversion from other sorts of action arising from the representation of the self as therein disapprovable. In the one mode or the other, every man who acts with conscious and purposive morality is and must be a *poseur*—before himself; though it is possible to avoid being a *poseur* before other people. And he who disclaims this character does not possess it the less for being self-deceived.

We have not yet, however, seen the full significance of this species of self-conscious desire. It is not merely a highly important and deeply influential motive in human conduct; it is, in reality, the motive which can be shown to lie behind all others in the volition of self-conscious agents, and to be that which is necessarily presupposed in every relevant application of the verb 'ought' to acts of will. It is the thing that makes criticism of the ends which different men may set before themselves possible; there can be no such thing as pertinent discussion upon moral matters between two or more persons, where responsiveness to this desire is not tacitly assumed to lie within the bosoms of the parties to the discussion. It has, indeed, been commonly assumed by the 'teleological' sort of moralists that you could intelligibly discuss the 'worth' of ends, of conceived future situations, and persuade a man that he 'ought' to choose the end having the greater intrinsic worth at the conceived future moment. But this clearly is logically absurd and psychologically impossible. A future situation, or any element in that situation, can be an 'end' for my will only when I desire it; and always I either desire it or do not desire it. Once, indeed, it was the fashion in teleological ethics to suppose that all men necessarily desired some large, general end, such as their own happiness, or the greatest good of the greatest number, or their own self-realization; the business of the moralist was then merely to show men more fully the constituents of and the means to this predetermined general end; and his 'ought' could only mean: since you desire this end you by implication desire these means, and if you would act consistently [even here there is an invocation of interest in the predicates of the acting self] you ought to employ them. But I suppose that the theory that we first of all desire some general and abstract good is now sufficiently exploded. It appears to be generally admitted that a man primarily and ordinarily desires simply those concrete and specific future situations which present themselves to his imagination as interesting and desirable and alluring; *e. g.*, some particular pleasure, or the social standing of his children after his death, or fame, or an election to the Presidency, or the triumph of socialism, or revenge upon his

enemies, or the glory of God. And, I say, a man either desires any one of these things, or he does not; and if he does, it is meaningless—so long as you regard the will as being merely bent upon future goods resulting from action, and so long as you differ from him merely as to the value of given ends—to come to him and tell him he ‘ought’ to desire those ends. You may, indeed, produce some effect upon his mind by getting him to see that, by virtue of known relations of cause and effect, the supposed future situation will contain elements which he had overlooked, and which he does not really desire; or you may stimulate a competing desire by bringing some other and still more alluring future situation before his mind, or by any one of the hundred modes of social suggestion. But all this has nothing to do with the ‘ought’; it is merely a process of testing designed to make him see clearly what he most *does* desire. And if, when he has fully apprehended all the practical implications of the imagined future situation, he still holds to his desire for it, you have no means of proving to him that some other end (merely as end) which he does not want is for him a more valuable end. For ends surely can not be treated in abstraction from *de facto* desire. And thus *de facto* desire will so far have the last word; and no ‘ought’ will have anything to say against it. When, in short, you take account of no aspect of volition except that in which it appears as a means to the realization of goods, there is no going behind the returns as they are eventually reported by actual preponderant desire. *De finibus*, one may accurately say from this point of view, *non disputandum est*.

But what really gives the ‘ought’ relevancy to this mental situation, and gives to *it* the last word in the discussion, is the fact that the self-conscious agent not only chooses ends, but also contemplates himself as in the act of choosing and of realizing them; and that he has two kinds of desires: that he is not merely a desirer of valuable goods to be attained through his action, but also a desirer of approvable qualities of the self to be manifested *in* his action. The idea of ought, then, as applied to volitional choices, *gets its meaning entirely from the contrast between these two types of human desire*. Your desirer of wrong ends may want those ends most intensely; but he may at the same time not at all like the picture of himself as a chooser of them; he may be in the highest degree repelled by the predicates or adjectives which habit or a sense of consistency compels him to recognize as applicable to the self when it acts in the manner proposed. And his admission, to which you may bring him, that he ‘ought not’ to choose the end in question, merely expresses his sense of the incompatibility of these two desires, the necessity of inhibiting the former if he is to satisfy the latter—if he is to be, what it

is humanly impossible for him not to want to be, a self upon whose representation as it acts he can now look without loathing or contempt. Were there no such discrepancy between two types of desire, generically different by the nature and the date of the objects to which they refer, no man could ever have felt an 'ought' within himself with respect to his own purposes and choices; and the 'oughts' that outsiders might hurl at him would have no sort of logical grip upon him. To sum up this point, then, there are only two fundamentally distinct forms of subjective interest that determine deliberate choice: (a) the direct or spontaneous interest in a conceived future situation that may result from one's action; (b) interest in having the self *in* action the subject of approved predicates. The former is not strictly ethical at all, since there is in it no means of effectually appealing from the facts of desire to any 'ought.' As soon as moral discussion arises as to what end *should* be chosen, or as to what a rational object of desire is, the implicit appeal is always to this second kind of interest, that concerning the predicates of the self conceived as chooser or doer. This unconscious appeal betrays itself constantly in the dialectical procedure of teleological ethical theorists. Thus that usually clear and consistent kind of teleological moralist, the egoistic hedonist, when he endeavors to persuade other men to subordinate present gratifications (which they really want) to remote future satisfactions (which they don't really want), or when he dissuades them from absolute self-sacrifice for any impersonal end (even though that end seem to them the most interesting and important thing in the universe), is not really appealing to their desire for happiness; he is playing upon their desire not to be fools, self-condemned as weak or irrational in their behavior. This comes out particularly amusingly in the speeches of Calicles in the 'Gorgias'; that emancipated young gentleman supposes himself to be setting aside all restraint upon the free outreaching of desire after its object; but he is obviously doing so only from a painful sense of obligation to be truly and fully emancipated. The rejector of all objective standards in the same breath seeks to persuade Socrates that he, too, *ought* to reject the standards to which he happens to be subjectively attached, on the ground that such attachment is foolish and irrational. So, again, the self-realizationist seems to me to be impressed by his particular kind of ideal, not because self-realization would be a 'good' in the sense of finally satisfying the will, but because a fully realized self is an admirable and gratifying sort of potential self to contemplate. Every ethical teleologist who condemns an end as an irrational object of pursuit is really characterizing, not the end merely as such, but the quasi-esthetic qualities of any self which should choose that end; for an

end can not be irrational, but a self may be. And the characterization is morally pertinent and effective because men are so built as to be solicitous about the quasi-esthetic qualities of their objectified selves.

It is, I believe, possible to go still farther, and show that this solicitude is not only the ground of the possibility of the ought-consciousness, but also necessarily the determinant of every fully self-conscious choice; that when man is once caught up into this situation where his prospectively acting self stands clearly before him, he can not let it go until he blesses it—until, that is, he has contrived somehow not to be wholly dissatisfied in that self-representation. The desire under consideration appears to be the Brahma of the moral consciousness; and it may well say to the moralists who neglect it:

“They reckon ill who leave me out,
When me they fly, I am the wings.”

We shall not have the right starting-point in ethics until we recognize that all rational and self-conscious choice in man is *not* (in the language of the schoolmen) made *sub specie boni*, but rather *sub specie honesti*.

But upon this last-mentioned point I may not, in this rough, preliminary paper, amplify; nor is it possible to discuss the further questions that obviously suggest themselves; *e. g.*, how the teleological and the approbational kinds of desire are to be brought to common terms, and how the diversities of the latter, and its apparent arbitrariness, are to be reduced to a coherent and verifiable body of moral judgments. But I do not wish to conceal my feeling of the significance even of the ill-formulated *aperçus* here suggested. If they are true at all, they have a somewhat fundamental methodological significance for ethical theory; for they purport to render obsolete a conception of the working and motivation of the self-conscious will which, in one form or another, has powerfully influenced much of the most critical and important ethical reflection, and has constituted the essence of the psychological part of all teleological moral doctrine. They indicate that the rational agent is not primarily a chooser of ends at all, but a chooser (or avoider) of personal attributes or adjectives; that all ethical dialectic necessarily presupposes and appeals to such an interest in the predicates of the represented self; and that the notion ‘ought’ has no pertinency whatever to ends, except in so far as the choice of some end is conceived as the ground of the application of some adjective by the self to the self.

ARTHUR O. LOVEJOY.

THE MENTAL ANTECEDENTS OF VOLUNTARY MOVEMENTS¹

IF the members of this audience were to answer the question, In the case of a voluntary intentional movement must there be images of the sensations, resident or remote, caused by the movement as the immediate antecedent of the motor discharge? there would be a fairly sharp division.

In general, those who think of psychology as a sort of mental chemistry and who think that the connections between mental states are somehow a function of the nature of the mental states themselves will answer, Yes. They will have the support of the majority of general manuals of psychology. Those who think of psychology more naïvely as a general rationale of human behavior and who regard the connections between mental states as throughout functions of the connected action of specialized body-cells will in general answer, No. They have the support of many, if not most, of the recent investigators of voluntary movement.

To Professor Woodworth's thorough treatment of the question in the Garman *Festschrift* and to my own published statements, I have little of consequence to add. I ask your attention, especially that of our opponents, to five facts.

I. The images of the resident or remote sensations caused by a movement are common accompaniments of willing *not* to do it. If I say to any one: "I shall name an act; when I name it, will to do it or will not to do it. Take a pencil and write your name," and then ask of those who willed to write their names, "What was in your mind when you willed to write?" I shall by some be told, "An image of myself writing my name" or "A visual image of my name as written." But I shall, on asking those who willed *not* to what was in *their* minds when they willed not to, be told by some of them also *precisely the same thing*.

There is thus good reason for the suspicion that in the first case the image came as a natural consequence of the idea 'write my name' rather than as a necessary dynamic factor in the action.

II. We can will acts images of whose resident sensations are unobtainable. If ten years ago some one had said to us: "I wish to make an experiment in voluntary movement. Please make the following movement. Turn to page 46 and look along the third line, moving the eyes smoothly from its beginning to its end. Now tell me what the immediate antecedent of the smooth movement was,"—what would our opponents have needs replied? Either "A motor image of a smooth movement from end to end" or "I could not

¹ Read before the American Psychological Association, December 29, 1906.

will to move the eye smoothly along the line." Of course none of them will assert that they would have replied the latter. But in asserting the former they would have assigned, as the cause of the movement they actually made, images of the resident sensations of a quite different movement, images also which were presumably non-existent. Our willing to move the eyes smoothly so as to look at a point four inches from the primary line of regard in fact consists in calling up some frame of mind which produces the movement series which we may or may not mistake for a single smooth movement.

I may note in this connection that Dr. Burnett's experiment showing that the time taken to perform a series of voluntary acts may be less than the time taken to have the corresponding series of motor images may be performed in a much easier and perhaps more conclusive way. Let me ask you, for instance, to write as rapidly as possible the following: *e*, 2, *a*, 4, *c*, 3, *i*, 7, 1, 5, 9, 1, a dot, a dash, a comma. You have done it (or could have done it) in about six seconds, the time of my uttering the names. But I am confident that no one of you had or would have had all the fifteen corresponding motor images in that time. For it is difficult to call up the motor image of writing a 4 while you are actually writing an *a*, and between the one act and the next there is only the interval of some few thousandths of a second. The factor of the prevention of the image, which our opponents presuppose by the existence of contradictory actual movements at the time the image should operate, is perhaps more instructive than the mere insufficiency of time.

III. In many, if not most, of our voluntary acts what we consciously will to do is something which we can easily name or otherwise refer to and put ourselves in the way of doing, but which requires a series of movements images of which (or of their results, separately) could not be gotten by any of us in less than several minutes' time or by many of us at all. You can, for instance, now will to draw a polyhedron of 28,000 sides, or to go to Boston tomorrow, or to walk into every room of this building, or to copy pages 20 to 28 of Crelle's 'Rechentafeln.' It would appear ridiculous were I to venture to ask our honored President, who has said that such images are always present, though perhaps unattended to, to attend to his images as he wills to copy pages 160 to 169 of his admirable 'Psychology' and inform us in a few words what the resident or remote sensations of that act are. If it seems ridiculous, that is not because it is an unfair test of the image theory of willing, but just because in many volitions the images of the resident and remote sensations caused by the act willed have nothing whatsoever to do with willing it.

I can only mention my two remaining notes.

IV. In trying to get any one to make a voluntary movement we rarely take means specially useful in calling up the images of resident or remote sensations, and often do take means specially to prevent their appearance. Pragmatically, at least, the image is an irrelevant factor.

V. If we insist on the image's effective presence we make voluntary action sharply discontinuous with involuntary action. On general principles this seems an undesirable corollary of a theory of voluntary action.

When one considers such facts as those to which Kirkpatrick, Bair, Woodworth, Burnett and others have called attention, one is almost compelled to believe that our opponents must believe really as we do and be talking about something other than the necessary antecedent of a voluntary act when they postulate an image of its resident or remote sensations. I hope that this is so; that I have wasted your time in defending an hypothesis with which no one disagrees. For the only other explanation which seems possible is that eminent thinkers are now as in the past misled by individual habits of imagery and a desire to have something as the antecedent of a movement which shall be something *like* a movement. Our psychological forefathers were bewitched by this *similia similibus* fallacy. They demanded a feeling of innervation to cause a motor discharge, a feeling of choice to cause a reaction to blue and not to green, a feeling of 'flat' or pure will to cause any voluntary act, a memory image to be compared with the stimulus in recognition, etc. Can it be that our fathers in psychology still crave that a mental state, to be efficient, shall *be* like what it *does* or *brings to pass*? Can it be that opposition to the fact of direct connection between any kind of a mental state whatever and a movement in voluntary, as in involuntary, action is a sort of psychological animism, the lineal descendant of the psychology of the days when nature's joy made the spring, her passion the tempest, and her grief the rain?

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DISCUSSION

A PRAGMATIC BABE IN THE WOOD

PROFESSOR J. E. RUSSELL'S article on the pragmatic view of truth¹ marks an important forward step in the controversy, because it shows that criticism is at last abandoning vague generali-

¹ This JOURNAL, Vol. III., p. 599.

ties and getting down to business, and the analysis of concrete cases. Unfortunately, Professor Russell's analysis is hardly thorough enough, and so I can see no reason why a truth which has so far escaped the wisest should be revealed by his babe in the wood.

Professor Russell has chosen a case in which the rigidity of the real is almost at a maximum, and in consequence the agent's volitional contribution to the situation and its issue seems to be at a minimum. The victim of his illustration is, he tells us, 'lost' and 'without food and shelter' and on the verge of inanition. He is reduced to such impotence that apparently no choice of his can alter the 'objective conditions' which dominate the situation. He has to find the one right way out or die. Whence it is inferred that there is no volitional making of truth in such cases, and that in all other cases also the making of truth is only acquiescence in already made conditions.

Now it need not be denied that such situations may occur, but it is quite erroneous to suppose that they do not contain a contribution from the subject which is essential to constitute its 'reality.' And so the case is really indeterminate. There are still a number of alternatives, by choosing between which truth can be realized. Thus (1) the 'lost' babe might have been saved without finding the 'right' way. He might have sat still, and his anxious mother, or even Professor Russell himself, might have come along and rescued him. Or (2) with enough time, patience and appliances he might *make* a way even where he could not 'find' one. (3) There might have been a variety of ways of reaching food and shelter. He might have fed upon berries and lived in a cave. Or a variety of paths might have led him back to civilization. Hence (4) it would not at all follow that *ex post facto* he would judge the course he actually took to have been 'the right' way. He might perceive that other ways would have been better, pleasanter and more expeditious. Whether or not he would judge it to have been 'right' would depend on his purpose. If this was merely to escape at any cost, he might regard as 'right' what he would judge to be 'wrong' if he desired also a quick, easy or beautiful way.

Which is the 'right' way, therefore, can not be determined apart from the purpose which determines the value of the envioning 'reality.' The objective conditions, that is, *do not fully 'determine'* the practical problem, nor is an idea true '*for no other reason*' than that it corresponds with an existent environment, supposed to be rigid. On the contrary, the purpose of the agent is always an essential factor in the situation.

To illustrate this we may slightly vary the terms of Professor Russell's case, and ask what is meant by being 'lost' in a forest.

Does not the question whether I can be 'lost' depend entirely on my purpose? If I merely go wandering forth without caring where I go or whether I get anywhere, I can not get lost. Or again, if I seek the wilderness merely to enjoy congenial company and some light refreshments, like the poet Omar, I may find it 'paradise enow,' and can not be lost. I can get 'lost' only if I can not get to where I want to go, or get to where I do not want to go. I get 'lost,' that is, if I want to get to a certain place by a certain time. But apart from this desire, the question whether I know where I am has no interest for me. If I am not in a hurry, there may be several alternative ways to choose from, each of which may have some attractions, and be judged good and right by me. If I experience a growth (or loss) of power, or if I change my purpose, I may radically change my valuation of what is the 'true' and 'right' way for me.

In short, it is probably impossible to conceive a situation such that our attitude towards it does not enter into our estimate of what it 'really and truly' is. The human purpose and valuation involved in the recognition of 'reality' have been wholly overlooked by Professor Russell, and that he should have failed to perceive this can be attributed only to the fact that he has assumed reality to be fully determined apart from our agency. But this is just the assumption he has to make good against the pragmatists.

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IN REPLY TO PROFESSOR JAMES

A RECENT note of mine concerning a philosophical problem in evidence¹ has been tentatively construed by Professor James as an attack upon his views and has been briefly replied to by him² in such a way as to grant my contentions *in abstracto* while denying their relevancy as strictures upon Professor James's own theory of experience. Inasmuch as the article in question was in certain important parts a criticism of Professor James's views, I am not averse to saying one word, and a last one, concerning the reply the article has drawn forth.

It would be unfair of me to ask Professor James to rewrite his philosophy for my own benefit; but I fear that his fascinating expositions that have appeared recently—chiefly in this JOURNAL—will never convince me as they stand that they have no idealistic implications. I am quite willing to believe that the difficulties I find in avoiding their idealism may lie in my own ignorance of Professor James's terminology. But when I read that 'to be rad-

¹ This JOURNAL, Vol. III., p. 645.

² *Ibid.*, Vol. III., p. 712.

ical, an empiricism must not . . . exclude from its constructions any element that is directly experienced' and that 'for such a philosophy . . . any kind of relation experienced must be accounted as "real" as anything else in the system,'⁸ I am utterly unable to reconcile the common-sense realism implicit in these sentences with the apparent idealism proclaimed in the remark that 'while one part of experience leans upon another part, experience as a whole leans upon nothing.' I can only conjecture that the reconciliation is to be found by showing that the word 'experience' is used in a different sense in each of the above passages. The citations here given do not suffer from being torn from their context, I believe. They exemplify a difficulty I am unfortunate enough to encounter only too frequently in those classic essays on radical empiricism.

Only two other matters: First, to call a philosophical theory a 'methodological postulate' does not exempt it from living up to the rules of the philosophizing game. If it is *only* a postulate that experience is autonomous and the physical world a mere ideal scheme, then this theory is neither right nor wrong. It is merely a *fiat*. But part of the *fiat* is that the *fiat* be right; and none of the radical empiricists seem to concern themselves over the logical paradoxes hereby precipitated. This is perhaps of minor importance; the second point is vital. Professor James's reply states that he is 'perfectly willing to admit any number of noumenal beings or events into philosophy if only their pragmatic value can be shown.' I would like to know whether Professor James believes that the cumulative evidences of both ordinary experience and the researches in all the natural sciences do not indicate with convincing clearness that countless things and events are, by reason of the very nature of experience itself, experienced as that which they are not or are only partially. And as a corollary question: if experience is self-supporting (in *any* intelligible sense), does this fact preclude the possibility of (a) something not experienced and (b) action of experience upon a noumenon?

Should the reply be that *some* sort of transmental is implied, I would gladly recant, even though Professor James should still insist that the nature of that transmental is irrelevant to all human interests, even the most intellectual. This latter issue might be settled by itself.

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⁸ *Ibid.*, Vol. I., p. 534.

REVIEWS AND ABSTRACTS OF LITERATURE

Concepts of Philosophy. ALEXANDER THOMAS ORMOND. New York and London: The Macmillan Co. 1906. Pp. xxi + 722.

The title of this important new work by Professor Ormond—'Concepts of Philosophy,'—is not indicative of its contents. For it is essentially a work on the philosophy of religion. Or rather it is a work on religious philosophy, not treating in detail of religious phenomena, but giving those philosophical concepts that justify the religious construction of experience. It is remarkably free from blemishes of the polemical spirit. It is characterized by the same sweetness and light that we note in the Rev. Dr. Sewall's 'Reason in Belief.' It is, of course, as any philosophy of religion must be, controversial of all merely empirical interpretations of experience. It invalidates the scientific interpretation, not by mere negation, but by showing how the mechanical theory itself is only completed in a teleological view of the universe. "A final theory is one that transcends mechanism and finds the original spring of things in intelligence and purpose. Mechanism itself is reached only by abstraction from intelligent and purposive activity" (p. 184). The concepts of philosophy that he reaches are necessarily those of absolute idealism. But he guards against taking them as being abstractly intellectual. With Hegel, he insists upon their purposive character, and goes further in reintegrating the emotional element of concrete experience. He thus succeeds in conserving all that the pragmatists contend for, without giving up the fundamental rational construction of experience. It is impossible to give an abstract of this large product of ripe philosophical culture. But we may indicate some of its chief points.

His central principle, to which all his critical procedure leads, is that of Personality—"a transcendent and eternal consciousness, whose thought and purpose would be adequate for the movement as a whole" (p. 394, cf. et pp. 335, 517 and 718). He works up to this by a critical exposition of the abstract view of the scientific construction of experience, showing that it abstracts from the fundamental relation of every form of experience to consciousness. Consciousness, in its highest form of self-consciousness—that *to which* every real thing is—is the fundamental reality. One finds himself criticizing the author (p. 409) for his rather loose use of the term consciousness. A more thorough working out of the concept at the start would save some confusion.

Natural science abstracts from consciousness and gives us an abstract external world in a mechanical system. Purposive intelligent consciousness then asserts itself against this abstraction when paraded as the whole truth of experience. Its acquisitions are reread and reinterpreted by philosophy in the light of the concrete situation. Naturalism makes nature indifferent to consciousness, treating it at best as a helpless spectator. Philosophy corrects this abstraction and grounds naturalism and mechanism in consciousness as the final and efficient term in reality (p. 393). Kant's supposed Copernican revolution was really (as later

idealistic philosophy shows) 'a change from what we may call a *hilo-centric* to a *psychocentric* conception of the world of reality' (p. 70).

His chapter on the 'Dialectic' is not quite what one would expect. It lacks the clean-cut intellectual exposition that is ordinarily supposed to be the characteristic of the dialectic. With him it is diluted or mixed with more practical elements. It takes the form of an evaluation of 'the plain man's' knowledge by science and metaphysics, but it reaches its aim in showing how it is that only the metaphysically real—the eternal self-consciousness—is the ultimate category of explanation. In the light of this principle he reviews physical science, biology, social activities, the community, and the social and ethical syntheses. The chapters in which he treats of these various constructions are full of clear conceptions and interesting details. The dialectic persistently shows the inadequacy of all these constructions. But it is chiefly the *ethical synthesis* that is made the bridge to the religious construction. Here we reach the demand for 'an eternal consciousness, now in the garb of a supreme and all-comprehending ethical purpose, in which the ethical purposes of finite individuals shall be included and conserved, and which at the same time shall supply the *universal* under which the world forces as a whole may be unified and subordinated to conscious direction' (p. 395). He accepts the alternative of taking such an *eternal consciousness* as the final term of reality and as *primate* in a world of reality, and then proposes to accept the rigorous logic of the situation—that of construing all forms of physical and psychical existence as grounded in it. That is, he accepts the theistic interpretation of experience as a whole. In a chapter on 'Emotion and Rationality,' he reintegrates emotion in his first principle of personality. The completely rational must satisfy our whole conscious nature. "If it satisfies the intellect but leaves the emotional world in chaos, it does not embody a completely rational situation." Then follows this statement: "A completely rational conception of reality is one in which the combined requirements of thought and feeling are ideally met by a principle of unity that has its spring and type in the oneness of conscious individuality, uniting with a principle of individuation that it includes while it grounds and limits the variations of personality" (p. 409). Both phenomenism and pantheism are consequently ruled out as not being completely rational, and we are boldly and firmly carried into an anthropomorphic interpretation of experience as a whole.

Where analogy with self fails there knowledge ceases. The purely transcendent is the utterly unknowable. These are Professor Ormond's repeated dicta. But no phase of experience fails to give us both transcendence and self-likeness. The ultimate reality is like and *super-like* self. These are the two strands that Professor Ormond seeks to weave into the pattern of the cosmos. There are many questions we should like to ask him before giving a verdict as to his success. But let that go, and let us briefly summarize, where we do not criticize.

He devotes a chapter to a consideration of the psychological roots of religion and another one to the question of the origin and development

of religion. These two chapters are largely critical of current anthropological theories of the religion of primitive man. But they also give a constructive view of religious elements and processes and progress. The two main elements that he analyzes out of the process are those of the transcendency and the likeness-to-self of the object of religion. Knowledge of God is a progressive personalization of the transcendent, by what he terms an 'infitation of human analogies' (p. 468). This is a process which more truly represents the advance than does Spencer's view of deanthropomorphization, which only characterizes a decadent movement. Analogy with self is the only means of knowing God. Crude anthropomorphism can only be replaced by a more and more elevated one. When it is entirely gone, then knowledge of God is gone too.

But even in its crudest form anthropomorphization implies an infinitation of analogies of self. In the use of these "analogies of our self-hood experience, we are forever approximating, but ever falling short of, a complete and adequate realization of the Divine. . . . Self-hood supplies the germ of an experience which, if its forms could be completely developed and all its possibilities translated into reality, would have transcended the limits of finitude and relativity and become absolute" (p. 572). Here we find him stating a relative agnosticism as he does in other places. The 'sense of transcendence' is never wholly intelligizable by the personalizing process. "The result is a movement of approximation in which we are progressively *conceiving* the value of X, which stands for the Divine nature, but never reaching a *definition* that can be taken as final" (p. 489). Here we are utterly unable to understand Professor Ormond's position.

Here he is apparently treating of mere conceptions or picture-thoughts about God as 'the great eject' (p. 119). But he has previously identified God or the Absolute with self-conscious personality. That was his ultimate *definition* of the Absolute. On that ground of *rational definition* he is at one with the so-styled gnosticism of Hegel and other absolute idealists. It is a great lapse of the argument to take the question into the region of picture-conceptions and thus unavoidably fall into agnosticism. "The analogy of self-hood is the principle of intelligibility in general" (p. 609). What need, then, to lapse from his doctrine of self-hood as self-consciousness to that of an empirically conscious self? Then take the following quotation at his highest point of view: "We do not regard God as a being like ourselves up to a certain point and so far forth intelligible, while beyond that point His nature becomes transcendent and wholly inaccessible. . . . If God be intelligible at all He is intelligible in His whole nature. . . . God is a being like ourselves in a true sense,—our other self. He is this in His whole being and not in a mere part of it" (p. 610). There is no congruity between this *definition* of the Absolute and his assertion that 'we never reach a *definition* that can be taken as final.' Surely all that he can mean is that we can never reach a final *picture-conception* of God. A philosophy of religion should definitely evaluate *picture-conceptions* in terms of thought and then have done with agnosticism.

Otherwise we find Professor Ormond's using of the two strands of *self-analogy* and *transcendence* of great force and enlightenment in his interesting discussions of the theistic question.

Depersonalizing deity in occidental pantheism reaches the same goal attained in oriental thought by the depersonalizing of self (p. 475). In either form the depersonalizing process is a decadent movement. That is the hopeful, gnostic strain that dominates the whole work.

In the light of this, the human individual gets his just place. "The self is not simply '*a piece of the Absolute*,' as Royce says (unguardedly, I think), nor is the self simply a *specialized purpose* of the Absolute" (p. 525). But, 'in man, God is instituting finite replications of Himself, natures which find their ideals of life and good *realized* in God and which are bearers, therefore, of a divine destiny.' "It is an abuse of analogy, to characterize these finite selves as *bits of the Absolute*" (p. 665). He further criticizes Royce's grounding of the finite individual in the Absolute as failing to secure its worthwhile reality (p. 669). The one must not be so conceived, that it swallows up the many.

It is to be noted that in treating of the destiny of man, after canvassing the different grounds for immortality, he comes to say: "All the proofs of immortality, from Plato down to John Fiske, have rested on the presumption of the *teleological* character of man's life . . . The Platonic proofs have supplied the model of all proof in this field" (p. 675).

It is to be noted, too, that he carries the teleological principle into his chapter on 'Nature,' and thus makes way for his conception of man as a part of—the culmination of—the nature process. "Why should a purposeless system evolve as apparently its most characteristic product a purposeful being" (p. 651). "Let us once become thoroughly grounded in the doctrine of the divine origin of nature, and we shall not have any trouble with the natural extraction of man . . . Through nature he comes from God" (p. 622).

The volume is too large and too important for anything like a fair appreciation, except in the form of an extended review. We trust that we have said enough to voice our judgment that it gives a thoroughly notable and helpful addition to our standard works on the philosophy of religion. It is to be hoped that the next edition of the work will give us a good index.

Let me close with a quotation from the last page of this most delightful and stimulating volume: "There seems to be, in the last analysis, just two alternative views of consciousness that can be regarded as at all rational. The one is that which conceives it as *mere awareness*, and consequently, when logical, reduces it to a mere spectator in the world. The other is the view advocated here; namely, that consciousness is an *agent*—in fact the agent of agents,—revealing in its activity the truth and significance of the inner nature of things" (p. 718).

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On Mathematical Concepts of the Material World. A. N. WHITEHEAD, Sc.D., F.R.S. *Philosophical Transactions of the Royal Society of London*, Series A, Vol. 205, 1906. Pp. 465-525.

This paper represents an attempt to develop concepts of a material world in a manner similar to that in which concepts of mathematical systems are now commonly developed. By a mathematical concept of the material world is meant a defined system of relational types such that if the proper entities are chosen as the terms of some specific system of relations conforming to these types, the system will represent known truths of the physical world. At least this is true of the five concepts which are here developed, although the abstract statement of the problem merely requires that a material world be a set of entities forming the field of a polyadic relation R and having the axioms of geometry expressive of certain properties of the field of R . The uninterpretable concepts are, however, avoided just as the students of pure mathematics are accustomed to leave undeveloped those concepts which admit of no useful specification.

Accepting Mr. Whitehead's further limitation to worlds depicted by three-dimensional Euclidean geometry, we recognize the classical concept of the material world as involving relations between three sorts of entities, points of space, particles of matter and instants of time, the first two of which are grouped together, without metaphysical implication, under the name of 'objective reals.' The class of 'objective reals' is, therefore, dualistic, and the first attempt at simplification naturally aims at doing away with this dualism.

The second concept, which is derived from Mr. Russell, starts from the fact that it is the essential function of matter to correlate some points of space with all instants of time and therefore substitutes for the class of particles a class of relations having as their domain a three-dimensional continuum, space, and for their converse domain a one-dimensional continuum, time. Mr. Whitehead questions the utility of this concept on the ground that relations can not be perceived, but in doing so he has departed from the standpoint of pure mathematics, from which it could be replied that it is the specifications of the concept and not the concept which come in question for perception, and even if relations should be unperceivable, so long as we can specify the correlating relations as particles of matter the concept is just as good as any other. It is a question, however, whether this concept is practically a simplification.

Another way of avoiding the dualism of 'objective reals' is to make use of the Leibnizian notion of relative space, and let points of space move. All geometrical theorems must then be correlated with an instant of time when referred to particular points or classes of points, and some sort of 'kinetic axes' must be introduced to give meaning to the assertion that a point is at any time in the position occupied by another point at some other time. Points are differentiated merely by their motions, and if by persistence of volume we mean persistence of the same points in the same relative motions, we have a conception close to that of Lord

Kelvin's vortex rings. We may, however, interpret persistence of volume merely as persistence of the relative motion of a complex of points the individuals of which are constantly changing.

The last two concepts are developed from a linear entity somewhat analogous to directions and lines of force, called by Mr. Whitehead a 'linear real.' We get in this way quite complex concepts, but they are very suggestive of physical ideas. For example, the fifth concept involves five different kinds of points, some of which may be looked upon as positive and negative electrons according to certain characteristics of the 'linear reals' which they contain. It is remarked, however, that we still lack some simple hypothesis concerning the motion of the 'objective reals' to correlate them with electric points and electrons. "From such an hypothesis the whole electromagnetic and gravitational laws *might* [italics mine] follow with the utmost simplicity." The attractive aspect of the concept is that by it the properties of space and of objects in space are derivable from one sort of entity.

Greatly as the production of these concepts testifies to Mr. Whitehead's ingenuity, they are too remote from ordinary thought and too incomplete in critical points such as that quoted above to make one feel that the labor of either author or reader is quite justified, but there are two preliminary studies to the linear concepts which take up a large portion of the paper and are immensely worth while to the student of the logic of mathematics. They are the 'Theory of Interpoints' and the 'Theory of Dimensions.' If a linear element is taken as fundamental we must be able to define a point, 'the intersection of lines at a point,' without the circularity here manifest and without the distinction of the descriptive and the projective point made use of in ordinary geometry. The above-named theories do this very prettily in two distinct fashions.

The 'Theory of Interpoints' (intersection points) starts with a class of 'objective reals,' perfectly simple, indivisible entities, and a relation $R;(abcdt)$ which we are told may be read 'the objective real a intersects the objective reals b, c, d in the order bcd at the instant t .' But to avoid the suggested connotation of 'intersects' we may equally well read $R;(abcdt)$ 'the banker a has business dealings with the bankers b, c, d of importance varying in the bcd order at the time t .' The advantage of the otherwise unbearable symbolism of the text is that all accidental connotations are thus readily avoided. We can then say that a banker y has a position in the relation R similar to that of a banker x when a has business dealings of the same importance with both x and y at the same time. We can further define a business set as the class of bankers having similar positions with respect to a and including a . All the business sets of which a is the ruling member constitute a series of sets. Now a business set so defined is an accurate specification of Mr. Whitehead's 'interpoint,' and the series of business sets represents the 'punctual line' which is associated with the 'linear real' a . What is meant by the meeting of two lines at a point is, therefore, defined without circularity, and we have a beautiful illustration of the truth that pure mathematics concerns itself with types of relations only, abstracting from all possible specifica-

tions of the relations and utterly heedless of the entities which may stand as their terms.

The 'Theory of Dimensions' is especially interesting from the fact that it does not involve ordinal properties in the accomplishment of its end. We begin by defining a ϕ -class, *i. e.*, a class such that if u is a ϕ -class the proposition $\phi!u$ is true, and then by definitions of ϕ -regions and subregions we come upon certain properties of some ϕ -classes such that we can say that any class having those properties is a ϕ -point. From this point on it is a straight road to develop a complete geometry and finally arrive at a concept of a material world, but it is in these subsidiary theories and not in the concepts themselves that we believe the highest value of the paper lies.

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Aktionsströme vom Gehörorgan der Fische bei Schallreizung. H. PIPER.

Zentralblatt für Physiologie, Bd. XX., Nr. 9.

Die akustischen Funktionen des inneren Ohres und seiner Teile. H.

PIPER. *Medizinische Klinik*, 1906, Nr. 41.

Although the ears of fishes possess no cochlea, Zenneck and G. H. Parker have shown that these vertebrates respond, nevertheless, to sound stimuli. This response must, then, be mediated by some or all of the sense-organs in the ampullæ, utriculus and sacculus of the ear, or else by some organ outside of the ear. Investigators who hold the Mach-Breuer theory that, in the higher vertebrates at least, the cochlea alone is the organ of hearing have suggested that the hearing of fishes is probably mediated by sense-organs located in the skin. But Parker has shown, by severing the sensory nerves leading from the lateral line and other parts of the skin, that in some species at least the response to sound vibrations is mediated by the cochlealess ear. Piper has now studied this response, in the pike (*Esox lucius*) and eel, by means of action-currents similar to those demonstrated for the retina by Holmgren. Earlier work with these currents has shown that in general any active organ or tissue is electronegative toward other near-lying and non-active organs or tissues; and if when both are at rest the former shows a positive difference of potential toward the latter, this positivity (rest-current) is decreased when the former is excited. "Such fluctuations of potential, or action-currents, are a sure indication of the presence of functional changes in the organism."

Piper applied one electrode to the large otolith of the sacculus (or to that of the utriculus) and the other to the exposed section of the acoustic nerve, or to a near-lying part of the inner surface of the skull. The rest-current shows the otolith positive while the nerve section is fresh, but this current is gradually reversed as the exposed end begins to die (*absterben*). The sounds were produced under water by two whistles, of 100 and 260 vs. The action-currents always showed an increased negativity of the otoliths, and they subsided as soon as the sound ceased. "The deflection of the needle is greater when the sound stimulus lasts

longer, and when it is more intense. . . . Very faint tones, or a gentle tapping of the sides of the glass dish, suffice to produce the typical fluctuations of current in the ear of the pike. Soundless mechanical jarrings of the preparation, . . . or stirring of the water, *et cet.*, have no electromotor effect. . . . If neither of the two electrodes lies on the large otolith nor in its immediate vicinity, any parts from which the current may be drawn are indifferent to sound stimulation, and the current does not fluctuate."

"The above, readily-repeated experiments may be taken as positive evidence that fishes react to sound by means of their labyrinths. They have a comparative physiological importance in that they strongly support the view that has been chiefly defended by Hensen, and otherwise almost universally abandoned, that even in the higher animals the inner ear in all its parts, including the sacculus, utriculus and ampullæ, subserves essentially the functions of hearing."

The second paper above cited contains, after a condensed account of the anatomy and physiology of the inner ear, a discussion of the probable functions of the ampullæ and the two sacs. The author does not deny the Mach-Breuer theory that they serve as organs of a static sense (along with joint, dermal and other sense-organs). But he believes that they also, and probably primarily, mediate sensations of noise. Among other things he points out that resonators can not respond to noises (by reason of the interference between waves of many various periods) and that, therefore, if, as is believed, the radial fibers of the cochlea are resonators, these can not be the sense-organs of noise; that the researches of Hensen and Deetjen, not to say the plain facts of anatomy, prove that the nerve endings in the canals and sacs are affected when noises stimulate the ear; and that the researches of Parker and those (above reported) of Piper prove that in vertebrates at least as high in the scale as fishes, the labyrinth *does* contain the end-organs of sound. "The conclusion is, therefore, that the labyrinth in all its parts is to be accounted an organ of hearing. . . . in any case it seems to me that after the facts here adduced, the assumptions of the Mach-Breuer theory in its present formulation can scarcely be allowed."

The facts offered in these two papers deserve careful consideration, and, in the reviewer's opinion, Dr. Piper is right in saying that the extreme formulation of the Mach-Breuer theory (which substitutes the name 'statolith' for otolith) needs emendation. Those who have read the papers of Breuer will scarcely be able to give up the belief that both canals and sacs are concerned in our equilibration; but, on the other hand, it is almost inconceivable, in view of the anatomical position of the cristæ acusticæ in the sacs at least, that noises do not 'adequately' stimulate these organs. It is less clear, and is not proved by Piper's work, that the cristæ of the canals are so stimulated. While it seems well shown that the sacs participate in the perception of noise, it may be less certain than the author indicates that the interference between the components of noise stimuli is so complete as to exclude all participation of the cochlea. It seems highly probable that the sacs, and per-

haps the canals, subserve two very different functions; and yet if this is the case, a problem arises as to why movements of the head are never sensed as noises, nor noises ever felt as movements.

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Objektive Bestimmung der Schwingungszahlen Königscher Flammen ohne Photographie. KARL MARBE. *Physikalische Zeitschrift*, 1906, Bd. 7. S. 543-546.

The author let a König flame play under a moving paper roll, and found that if the paper was near enough somewhat to deflect the flame successive rings of smoke were produced which, when the speed of the paper was rightly adjusted, could be easily counted, and which accurately reproduced the vibration rate affecting the flame. Acetylene gas was used, and the sound was taken from a tuning-fork mounted in a special way on a resonating box. Again, the König membrane was replaced by a telephone membrane and connected with a microphone, and very interesting smoke pictures were obtained of spoken words. This method of recording oscillations of the König flame is simpler and cheaper than the photographic. The chief manipulative difficulty would seem to be that after passing the flame the paper is immediately rolled on a drum before the smoke curve is fixed. Yet the author reproduces excellent curves of tuning-fork vibrations, circuit alternations and spoken words. The photographic method if carefully handled gives more detail, yet the smoke curves of the voice look as if, on careful analysis, they might yield more intricate details than merely the fundamental pitch of voice sounds. They ought, moreover, admirably to record accent and syllable length in spoken verse. The method is interesting, and the curves that are reproduced are well worth looking at.

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JOURNALS AND NEW BOOKS

ZEITSCHRIFT FÜR PSYCHOLOGIE UND PHYSIOLOGIE DER SINNESORGANE. May, 1906, Band 41, Heft 5 u. 6. Abteilung für Psychologie. *Theorie der geometrisch-optischen Gestalttäuschungen* (pp. 321-348): LUDWIG BURMEISTER. — The first of a series of papers based on a very careful study of geometrical optical illusions. The observations in this paper are confined to illusions of perspective with right-angled plane figures or cards. Derivation of the fundamental theoretical relations between the *Objektgebilde* and the *Truggebilde*. *Beobachtungen über das Leben der Protozoen* (pp. 349-381): ANTON ÖLZELT-NEWIN. — General observations on the reactions of various protozoa by an observer apparently ready to attribute any degree of consciousness to these forms. Chief argument is that of continuity, the consequences of which would lead to ascribing a psychic minimum as a disposition to the cell. *Ueber*

Täuschungen des Tastsinns (pp. 382-424): ERICH JAENSCH. - Conclusion of a study of cutaneous illusions of filled and empty space. The illusion is found to be reversed in the blind. General results justify the belief that the criterion of estimating distances by the sense of touch is time. *Zur Konzentrationsfähigkeit des Träumenden* (pp. 425-426): ERWIN ACKERKNECHT. - Report of a dream where the person was able to frame a logical reply to a question which had not been previously read or formulated. *Literaturbericht*.

Diels, Hermann. *Die Fragmente der Vorsokratiker*. Zweite Auflage. Erster Band. Berlin: Weidmannsche Buchhandlung. 1906. Pp. x + 466.

Grasset, J. *Le psychisme inférieur*. Étude de physiopathologie clinique des centres psychiques. Paris: Chevalier & Rivière. 1906. Pp. 546. 9 fr.

Rutherford, E. *Radioactive Transformations*. New York: Charles Scribner's Sons. 1906. Pp. 287. \$3.50.

Saleeby, C. W. *Biological Philosophy*. In three volumes. Vol. I: Psychology; Vol. II: Sociology; Vol. III: Ethics. Edinburgh and London: T. C. & E. C. Jack. 1906. Pp. 124; 124; 118. 1s. net each.

Van Gennep, A. *Mythes et Légendes d'Australie*. Études d'Ethnographie et de Sociologie. Paris: E. Guilmoto. 1906. Pp. cxvi + 188. 10 fr.

Von Meyer, Ernst. *A History of Chemistry from Earliest Times to the Present Day*. Translated by George McGowan. London: Macmillan & Co. Pp. xxvii + 691. 17s. net.

NOTES AND NEWS

The *Athenæum* for December 22 contains the following: "At the Congress of German Physicists lately held at Stuttgart, Professor Hallwachs read a paper on what he called photoelectric fatigue, or the faculty which metals illuminated by ultra-violet light possess of emitting radiations capable, for a limited time only, of discharging an electroscope, and then ceasing to do so until restored by repose. Sir William Ramsay and Dr. Spencer in their recent paper on the subject (see the *Athenæum*, October 27th) went at some length into this apparent 'fatigue,' and thought it showed some correspondence with the characteristic valencies of the metals, and was due to the fact that it was only the more lightly bound electrons on the surface that were released under the impact of light. Professor Hallwachs, on the contrary, thinks that it is due to the clogging action of the ozone which is formed in considerable quantities when the reaction takes place in air. He has found the same phenomenon present when the discharge occurs in a closed recipient, and in this case he would attribute it to the absorption or occlusion of gases in the surface of metals. It is evident that the last hypothesis would carry him very far,

but it seems at first sight to be invalidated by the careful cleansing of the surface of the metal under observation which has been enjoined as necessary to the success of the experiment. Meanwhile Dr. Le Bon, by whom the phenomenon was first noticed, is denying that such things as electrons exist. In a series of articles just begun in the *Revue Scientifique*, he asserts—following therein Professor de Heen—that the conception of electrons is purely metaphysical, and has hitherto been as disastrous in physics as its predecessors the doctrines of phlogiston and caloric. According to him, the atoms of matter are merely tiny whirls or vortices in the ether, and owe their apparent rigidity to nothing but the enormous velocity with which their whirling movement is endowed. He seems to found this hypothesis chiefly on the fact that an apparently unlimited quantity of electricity or magnetism can be emitted by a strictly limited quantity of matter, electricity being, according to him, only a semi-material form of matter on its way back to the ether. Hence, he argues, the final cause of the phenomena that present themselves to our senses is not matter, but energy. He illustrates this thesis by instances drawn from what are generally called the elementary experiments in electrostatics, which have, in fact, been allowed to remain entirely unexplained by contemporary physicists. Incidentally he shows a curious experiment in which the charge communicated by a rod of ebonite excited by friction becomes either positive or negative according to the shape of the recipient. The articles in question will be published shortly in book form, and in French and English simultaneously."

'MINERVA' for 1906-1907, its sixteenth year, is somewhat more comistic *vs.* Realistic Education,' defends the modern drift away from classical training, while the opposite side is argued by Francis W. Kelsey, in by the assistance of M. A. Vidier, librarian at the Bibliothèque Nationale at Paris. The volume has for its frontispiece an excellent portrait of President Nicholas Murray Butler, and an extremely appreciative notice of President Butler himself, to whose article in the fifth issue of 'Minerva,' on American universities, the editor makes cordial reference.

A PARTICULARLY interesting number of the *Educational Review* is the one for January, 1907. Friedrich Paulsen, in a paper entitled 'Humanistic *vs.* Realistic Education,' defends the modern drift away from classical training, while the opposite side is argued by Francis W. Kelsey, in 'The Position of Latin and Greek in American Education.' The burning subject of the compensation of teachers is treated by Jefferson B. Fletcher, and a bibliography of teachers' salaries and pensions (eleven pages) is contributed by Charles A. Nelson. Other articles are by James H. Canfield, William McAndrew and Howard J. Rogers.

GEHEIMRATH BODEMANN, chief librarian of the Royal Library at Hanover, died on September 23, at the age of eighty years. Students of Leibniz are indebted to him for publishing in 1885 the former's correspondence with Élise Charlotte d'Orléans, and in 1888 the correspondence with Graf Antoine Ulrich von Wolfenbüttel. He issued in 1889 and in 1895 two catalogues of the correspondence and manuscripts of Leibniz, which have done much to facilitate important research.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

PRAGMATISM AS THE SALVATION FROM PHILOSOPHIC DOUBT

I BEGIN this paper with a frank confession of doubt. Briefly stated, this doubt concerns the certainty of truth respecting any matters of fact that lie beyond the circle of any immediately known facts of experience—the passing moments. My examination of the various theories of knowledge has brought me into this state of mind. And I am not less certain that this doubt is the logical result of these doctrines of epistemology than I am of the existence of my doubt. I think I can lay down the proposition that every theory of knowledge excepting that of pragmatism—which I am to examine—logically issues in philosophic doubt. This, I maintain, is not less true of idealistic epistemology than of realism. It is not a part of my present undertaking to justify my doubt; but, should any reader of this article think it worth while to challenge it, I shall be quite willing to give a reason for it and to establish the proposition I have set down.

It is in this state of mind that the pragmatist shall meet me; and I will assume that he is kind enough to undertake my intellectual salvation. I will assume that he now reasons with me in this manner: "Your doubt is, as you have said, justifiable; nay, it is inevitable, if you accept any other doctrine than the one I am going to offer you. Let me begin by assuring you that there is no other doctrine whereby you can be saved from doubt but pragmatism. The source of your doubt is your conception of truth and of knowledge; you have failed to find them because up to this time you have been ignorant of that which you have been seeking; and you have consequently been seeking for the wrong thing, or seeking in the wrong direction for what you wanted. Your teachers mean by truth some sort of relation between an idea or thought and something called reality, which is assumed to be other than this thought. Your idealistic teachers are no exception to this statement; reduced to consistency, their doctrine involves a meaning of truth that is not essentially different from the realistic conception of it, which

they affect to scorn as of the very essence of scepticism. Well, it has become clear to you that any doctrine of knowledge which is based upon such a conception of truth is foredoomed to failure; and whoso accepts such a doctrine must, as you say, find himself in hopeless doubt. Now, the only salvation from this condition lies in a fundamental, a radical change in your meaning of truth and knowledge. You must be truly converted from this error in your way of thinking. In respect to your conception of truth, you must be born again, if you would enter the kingdom of secure truth and of a peace which doubt can not destroy or trouble. Let me, therefore, help you to this change of mind, as the indispensable condition of experiencing the salvation I bring to you. In the first place, you must be led to see that truth has its source, its home and its meaning, wholly in experience; it lives and moves, has its being, does its work, within the tissue of that experience, and never transcends it. You have not to ask where in some transcendental realm shall truth be found. It is not to be sought as if it were far off, it is nigh thee, in thy life of feeling, thinking, striving, purposing, desiring, choosing, etc. In all this which is immediately certain to thee because it is experienced. If, therefore, you would find truth, you must seek it in this world of experience in which you are, and of which you are a part. Know first what this experience really is, what is the manner of it, what are its contents, its processes, and you will know what truth is; and you will securely possess truth. Viewed as to its contents, this experience is of immediately given, felt things, just quales of all sorts, which we call sensational and affectional matters, say, colors, smells, pressures, agreeable or disagreeable feelings, pleasures, pains. This experience also contains, or is of such things as, wants, dissatisfactions, dissentiencies of all sorts, impulses, desires, strivings, purposes, choices, actions.

“Viewed as to its form or modes of process, this experience is one of incessant change, a ceaseless coming and going of contents; the portions of it are known to be variously connected, so as to give a continuity in its passage or flux; these linkages of time, space, memory, anticipation, intent, fulfillment, means, end, etc., are themselves parts of the flux; they are parts of the experience contents, as much characters of the given, and therefore the known, as are the matters they connect. Taking, therefore, any portion or cross-section of this stream of conscious experience, that portion in its temporal aspect looks backward to what has passed, and forward to what is coming; it is reminiscent of what has been, it is expectant of what is yet to be.

“In this flow of experience, want is followed by something which fills the want; disharmony is followed by experience which har-

monizes; tensions of various kinds, such as fear, distress, perplexity, etc., are followed by experiences which relieve these tensional situations.

"Intention, purpose, etc., are followed by experiences which mean this intention's fulfillment and this purpose's achievement.

"Now, such being the character of experience, we can understand what takes place when within experience there arises any definite situation, such as want, disharmony, intention, purpose. In meeting such situations experience undergoes change, is modified, transformed, so as to issue in other experiences which are the satisfaction of the want, the fulfillment of those antecedent experiences. In short, a given experience works out of a situation of need or dissentiency or of purpose into another situation in which this need is satisfied, this dissentiency is removed, this intent is fulfilled.

"Now, whenever an experience or a portion of experience does so function as to issue in another want-satisfying, harmonizing, completing or fulfilling experience, then we have what I mean by *truth*; or, better expressed, the experience which has this issue is, in relation to its outcome, a true experience; or, to put it more accurately, the particular sort of relation between these two experiences is what truth originally means.

"Properly speaking, there is no such thing as truth, as a something which exists as a static and complete thing. There are only true experiences, and truth is a name for these experiences; that which makes an experience true is, as I have explained, just the fact that it leads into another experience which is its own satisfaction, fulfillment or completion.

"This trueness of an experience is therefore something inseparable from its own content, it is its property, its quale, and can no more exist, or have meaning apart from the experience itself, than can any other of its properties or quales.

"Now, what I have said about truth applies to knowledge; like truth, it is originally and fundamentally an affair of experience. Whenever in a given experience there is an awareness or consciousness of the experience, of its want, its discord, its intention, its pointing beyond itself, there is knowledge.

"One experience knows another when it thus means, seeks, anticipates, that other; and it completely knows when this meant, desired, purposed experience becomes actual. Truth and knowledge are, therefore, in their origin concrete things; they are born in experience; they are made by experience. A given experience begins to be true when it begins to lead into a completing, a fulfilling and practically satisfying experience; it is completely true when this other experience is wholly present. So with knowledge. It is virtual

at the point where the initial experience points to another; it begins to be actual when experiences leading to this ideally present experience begin to verify this anticipating, forecasting experience; and this knowledge is complete, or fully actual, when the last bit of experience is actual.

"This being the meaning of truth, we can explain how it appears to be a relation between an idea and its object, or between our thought and reality of some sort. This sort of relation does exist, but it is possible and has meaning only because ideas or thoughts are themselves not original things, but derivative and secondary things, because they are representatives of or substitutes for the concrete experiences.

"So long as we keep in mind the fact that ideas are only substitutes for actual or possible experiences, and that they can be valid or true only if they can be reduced to the experiences from which they are drawn by abstraction, we can safely treat them as if they were experiences, since they discharge the same functions, *viz.*, that of leading us into actual or possible experiences. An idea is therefore true for the same reason that the concrete experience for which it stands is true, and for no other reason.

"Now if truth means what I have said, and you accept this meaning, do you not see that you can not longer remain in doubt? Truth can be, nay, is, known, because it is experienced. It is a part of experienced realities, and no more doubtful than they are. Accepting this new meaning of truth, your doubt can no longer exist; it belongs to the old standpoint, to the old things that pass away, when you become a new man in respect to your fundamental thought.

"Let truth once mean for you what I have declared it to mean, and are you not saved from doubt, with a complete and a permanent salvation?"

Thus has my pragmatist teacher reasoned with me; and to this reasoning I am moved to make answer as follows:

"Your doctrine is plain to me; you have indeed made this way of salvation from philosophic doubt so plain that the 'wayfaring man, though a fool, need not err therein.' I clearly see what sort of a change I must experience if I am to be saved by pragmatism. But here is my difficulty: How am I to be converted? To become a pragmatist I must change my *thought*, and not merely my heart, which hardly needs change, since the wish to believe is already present. But how can I get this intellectual new birth? That is the question I fain would have you answer. Pragmatism is, after all, a doctrine, and as such you have declared it and offered it for my intellectual acceptance; you have maintained that it is the only *true* doctrine of knowledge. Now, I can not help asking: What do

you mean when you say pragmatism is the true doctrine? And how am I to be reasonably convinced of the truth of your doctrine? You have undertaken to reason with me, but how can you consistently do so if truth be what you say it is? And how am I to be reasonably led to accept pragmatism, how am I by reasoning to change my mind? My doubt I find now turns to your doctrine; I am in doubt respecting its truth. How am I to be saved from this doubt? Could I become a pragmatist by a happy accident, wake up some morning and find myself snugly in your kingdom of pragmatic certainty and peace, my doubt would of course cease to exist. But unless a miracle is to effect this new birth, how can you effect it while you remain a consistent pragmatist? And how can I get out of this doubt without making use of the same conception of truth which has brought me into doubt? I must become certain that pragmatism is true; but what does it mean to say that it is the true doctrine? And by what sort of process am I to become certain of the truth of this doctrine? I can not see how you can undertake to reason me out of my doubt unless you make use of the same meaning of truth, appeal to the same standard of a true judgment, which I have hitherto employed; and if you do employ this meaning, this criterion of truth, you are no longer a pragmatist. I do not see then how you can reasonably undertake my salvation at all. It seems to me that you must, if a consistent pragmatist, either leave me to perish in my doubt or trust that in some way, quite inexplicable, I shall have the blessed experience of becoming a pragmatist."

The conclusion of this matter appears to be, that pragmatism saves one from doubt only if he happens to be already or happens to become a pragmatist. Pragmatism is unable to make one a pragmatist, because its conception of truth is one which makes it impossible to produce a reasoned conviction that this doctrine is true.

But I am not yet at the end of my difficulties, though this difficulty is enough to bar me from pragmatic salvation. My doubt now takes a new turn. It now concerns the procedure of the pragmatist in the assertion and employment of his own conception of truth. "Do you, my would-be pragmatist deliverer, consistently adhere to your own meaning of truth? In other words, do you always mean by truth that which your doctrine declares? Can you keep this meaning of truth and really get anywhere in your world of experience? In particular, can you *consistently* have anything to do with other reality than your own experience, or can any one of your experience-realities or parts of experience have anything to do with any other experience or part of experience? I have no doubt you are as certain as I am that there is other experience than your own, other minds and reals which are not minds; but my question is: How

can you justify this your belief in terms of your meaning of truth and knowledge? If you reply that you do postulate, that everybody postulates, this other reality, that the many reals or experiences are the presupposition of your doctrine, I answer: Admitting your right to start with a pluralistic world, my doubt now concerns the possibility of your many reals having anything to do with each other.

"My question is: How can your cognitive, truth-realizing experience take account of me or that experience-reality I call myself? How can this my experience become reality for you? How can my *doubt* become your fact?

"There is yet another point in your doctrine which provokes my doubt. Suppose I accept your utility-meaning of truth in the fullest extension of that term, my question is: If in any situation in which truth arises, that truth-bringing experience is conditioned by something other than your own experience, say, your human fellow, how can you determine into what sort of relation to this other reality your experience must enter, if it is to issue in truth? How can it be determined what is to be the course of experience, the kind of change, the direction which transformation is to take, etc., which is to issue in truth, unless you do somehow take account of that other conditioning or codetermining reality? And if you *do* take account of this other reality, pray how can you do so except as you first conceive this reality in a certain way, then deduce from this conception certain consequences, certain possible or expected experiences and, lastly, verify your conception by actual experiences which agree with the deduced, the hypothetical experiences? Now if this is your actual procedure when you work in a cognitive way out of a given situation into some other situation, I can not help the conviction that you tacitly at least proceed upon *my* conception of truth, *viz.*, agreement of an idea with its object or of thought with reality.

"But once more, and as a last difficulty: Let me dismiss the matter of other reality, and let the experience be your own, or any one of your many parts of experience; the question now is: How will you avoid the tacit admission of the same meaning of truth? You will not say it is by a merely haphazard, a hit or miss procedure that a given situation is transformed, or reconstructed, so as to issue into the desired experience. To relieve a want situation, to fulfill an intent, to harmonize a dissentiency, etc., the experience process surely does not go in any sort of direction, await or point to any kind of experience which may happen to come; the experience process is determinate; it is in *this* direction rather than in *that*, that the transformation proceeds; to *this* end or issue rather than to *that*, it moves and looks in advance of actual outcome.

"Now, if this experience process is a determinate sort, if what it

issues in is likewise determinate, is there not involved and necessarily implied something of this sort: (1) An idea of your total experience, both past and that which is not actual but which is conceived as possible, this total experience viewed by you as having already a certain determinate character or constitution, such that if a certain experience is a part of it, a certain other experience will be or must have been another part of it. (2) On the basis of this conceived character of your experience, you expect that a given situation will issue in this particular experience instead of any one of the many other merely possible ones. (3) When you attain the experience which you call fulfillment of intent, satisfaction of want, relief of tensional discord, etc., this your judgment of truth or your certainty is the result of a comparison between the intended, the purposed, the anticipated experience and the one which actually comes.

“Now, if this be a true account of your actual procedure, as a pragmatist be it said, how can your method of getting truth in your own meaning of the term be intelligible, except as you recognize that these three processes are necessary parts of what you really must be meaning by truth and by cognitive experience? And if your truth experience, your cognitive experience, does contain these processes or elements, have you not all along been making an unrecognized use of the same conception of truth which you are trying to persuade me to abandon?”

I began this article with a confession of doubt; alas! I must repeat that confession at its close. I can find no salvation from doubt in pragmatism. The pragmatist is, I admit, safe from doubt, but as I am still compelled to regard him, he is in a paradise between which and myself there is a ‘great gulf fixed,’ which no reasoning of mine can cross; and, alas! no reasoning of his is permitted to cross to me.

I have in a former paper¹ set forth what seemed to me to be the difficulties in the way of accepting the doctrine of pragmatism. I have in another brief article² tried to show that the pragmatist’s meaning of truth does not bear the test of a critical examination of the concrete situations in which, as the pragmatist contends, truth must be sought. One of my pragmatist friends has done me the kindness to assure me that my efforts are of some use in forcing the pragmatist to a more accurate and clear statement of his doctrine. I have been made to hope that a statement of that doctrine is forthcoming that will remove all my difficulties, answer all my objections and, I suppose, refute all my vain reasonings in support of the so-called intellectualist’s meaning of truth. Well, I am still waiting

¹ *Philosophical Review*, Vol. XV., No. 4.

² This JOURNAL, Vol. III., p. 599.

for this final statement of pragmatism, this solvent word, this light in which I shall see how far from truth I have strayed and in what maze of error I am still groping. I have now made one more call to the pragmatist; this time a cry *de profundis* for salvation from doubt. *Has the pragmatist a doctrine of knowledge which can save from philosophic doubt?*

I have tried to show in this article that he has not as yet successfully offered such a doctrine. I can but hope that some pragmatist will be moved by this last appeal so to state his doctrine and so to establish its truth that a man in such doubt as I have confessed may be reasonably persuaded to accept it as his intellectual salvation.

JOHN E. RUSSELL.

WILLIAMS COLLEGE.

SOCIETIES

THE SIXTH ANNUAL MEETING OF THE AMERICAN PHILOSOPHICAL ASSOCIATION

THE American Philosophical Association held its sixth annual meeting, in New York, December 27-29, 1906, at the invitation of the Department of Philosophy of Columbia University, and in affiliation with the American Psychological Association and the American Association for the Advancement of Science. The various social functions were mentioned in a preceding number of this JOURNAL (p. 27). Officers for the ensuing year were elected as follows: President, Professor H. N. Gardiner, of Smith College; Vice-president, Professor R. B. Perry, of Harvard University; Secretary-treasurer, Professor Frank Thilly, of Cornell University; new members of the Executive Committee, Professor Ernest Albee, of Cornell University, Professor C. M. Bakewell, of Yale University, and Professor H. G. Lord, of Columbia University. The following is the program, with brief abstracts of most of the papers read.

The Energies of Men: WILLIAM JAMES. President's address, published in the *Philosophical Review* for January, 1907.

Some Points of Relation between Music and the Emotions: HALBERT HAINS BRITAN.

The central problem in the philosophy of music relates to its content. Does music find its true esthetic function in awakening and stimulating the emotions, or does its true value lie in the formal play of rhythmic tones in melodic or harmonic progression? is the usual form of the question. This paper was in support of the former hypothesis. Music differs from the other arts by having as its

medium the most exciting stimulus the mind receives. Sound, whether from physiological or biological reasons, is the natural way in which the emotions are expressed. This emotional excitability of sound is carried over to musical tones. The means at the command of the musician whereby he may shape the emotions of his hearers are: rhythm, which is powerful because organic; harmonic features, which include the major and minor modes, resolutions, etc.; timbre, pitch, and variations in tempo and in force. These, while almost disconcertingly simple, gain in emotional power in two ways: first, their vagueness merely suggests, leaving the mind to bring up elements fraught *for it* with emotional significance; second, these factors are all *dynamic* and are the only sense stimuli that conform to the natural history of an emotional reaction. The forms of painting and sculpture and architecture are static, the elements are dynamic, and as a result have a peculiar power over the emotions. Such are the impressive qualities of music which belong to it as sound. But music is also an art, and as an art must have underlying it those attributes which determine its *genus*. These attributes are the same for music as for literature, and hence music may be judged by the same criteria that determine the literary value of any work in this field of art. Such are unity, originality, significance and, as qualities of style, strength and content. The psychical significance of these elements in a musical composition is the same as in a literary production; that is, they affect the mind emotionally.

The Concreteness of Thought: GEORGE H. SABINE.

Philosophical thinkers are now generally agreed that only experience is real, and this only in proportion as it is concrete; but there are great differences between current conceptions of concrete experience and of the relation of thought to the concrete. An examination of concrete experience shows that it possesses the character of immediacy, but that the immediate must be further qualified as the individual, as that which possesses the richest possible content. Individuality, however, implies a position in an organized system, for an individual is constituted, not by isolation, but by functional relation to a systematic whole. The conception of organic unity is equally a postulate of generalizing thought, for true generalization must reach real synthetic principles. It appears, therefore, that the attempt to define the concrete can not stop short of an experience in which universality and individuality are at once completely satisfied, an experience in which perfect integration is combined with perfect differentiation. Only the absolute, therefore, is fully concrete, and for finite experience the absolute can be only an ideal of perfected rationality. Such an ideal, however, is organic to our actual ex-

perience because it is an ideal which we may progressively realize. The concreteness which we attribute to actual experience rests on the fact that this experience is always partially organized. If this were not the case, thought could never find a problem, for logical disorganization is the sole difficulty which thought can solve. Thought, therefore, is to be conceived as a function of concrete rationality by which experience is at once universalized and individualized; it is the means by which we realize in finite experience some measure of that ideally rational experience which is truth. The abstractness which characterizes conceptual thinking in general, and scientific procedure especially, is always a means to the attainment of concrete reasonableness. Abstraction is merely the simplification of a problem, which remains to be solved by the logical unification of the experience. The abstract sciences get their validity solely from the fact that they contribute to the rationality of experience as a whole. If this conception of thought is correct, it follows: (1) that the notion of a pure experience must be given up; (2) that no distinction in principle can be drawn between reflective and constitutive thought; (3) that reality is to be conceived, not as pure experience, but as the ideally rational experience which is the goal of thought.

The Nature of Explanation: WALTER T. MARVIN.

Explanation is an analysis of a whole into parts, or of a complexity into elements that are simpler and whose relations are simpler. In this definition two distinct processes are denoted by analysis: *substitution* and *analysis proper*. The scientist often substitutes for the original entities or phenomena other objects or symbols in terms of which the explanation is made, *e. g.*, the abstract entities or symbols of physical science instead of the actual phenomena experimented with. The work of explanation, however, begins properly afterward, that is, with analysis proper. This is the work of analytic attention, which seeks in the given content (original or substituted) for the component terms and their relations. In this search analytic attention discovers, at least approximately, absolutely simple components, namely, terms and relations that resist all further analysis on the part of attention. Further, analysis finds two types of terms, *parts* and *elements*, the former giving rise to an *atomic theory*, the latter to *abstract general laws*; but the former gradually merging into the latter as we pass from atoms that can be conceived as independent perceivable entities to abstract atoms, merely symbolic entities, and in turn as we pass from these to the abstract quality or property.

A New Syllogistic Canon: JOHN GRIER HIBBEN.

This paper will be published in full in the *Philosophical Review*.

*The American Society for Psychical Research:*¹ JAMES H. HYSLOP.

The paper first discussed the place between psychology and philosophy which was occupied by psychical research. At first sight the subject seems to be a psychological one solely, but a little reflection shows that it is also related closely in its outcome to the great problems of philosophy. It thus appears to be psychological in its method and philosophical in its object. With the field thus determined the general objects of the American Society were defined by indicating its relation to the larger scheme represented by the American Institute for Scientific Research, which aims to incorporate abnormal psychology as one of its sections in company with the work of psychical research. Psychical research had for its object the study of the claims of the supernormal without any predisposition to take any theory of it as foregone. As the study of the supernormal brings the psychical researcher into contact with the problem of a future life, this is the one that attracts the most attention. Hence the place of that belief in the philosophical, ethical and political systems of history obtains a special interest. The influence of the idea on past, and especially Christian, history is such that a verdict one way or the other is of importance to the intellectual and ethical life. As the past relied so distinctly on faith and looser methods of fixing conviction, the influence of scepticism to dissolve the older beliefs has left to science the protection of ideals that had once been the exclusive property of religion. This fact gives the solution of the problem an importance which it might not otherwise have. The material collected during the last twenty years points toward the disproof of materialism, and it remains to ascertain whether this direction of belief is justified.

The View That the Real is Control: G. A. TAWNEY.

1. Knowledge as control. Reality is said to be the content of judgments which control the further activities of experience. Reality consists in valid judgments, and judgment is the process through which the evolution of the real goes on. The objection, that this is subjectivism, is answered by the instrumental idealist by pointing out (a) that the subjective is the uncertain and the false, and (b) that he does not regard the real as belonging to this category. The judgment, that judgment is the controlling factor in experience, is itself controlling and real. Judgment is no mere sub-

¹ This paper will be published in full in the *Journal of the Society for Psychical Research*.

jective mental state. But the objector returns to ask, How about the judgment that the judgment, that judgment is controlling, is valid? The view implies (a) that reality is an infinite regress of judgments and (b) that there is always a judgment, the last member of the series, which is still untested and uncertain. Thus there is a realm of uncertainty and possible error, implied in this view, which is but is not real. That which controls, in this logical sense, is always objective, but the real is vastly more than this.

2. Energy as control. Usually conceived negatively as the external limitation and determination of activity. The real is a sort of strait-jacket of the mind. Objection may be made (a) that this view reduces the real to an unknowable thing-in-itself; (b) that it makes the world of knowledge phenomenal and even subjective; (c) that it presupposes a positive control opposed to 'the real' and exercised by the subject, the ego or consciousness. Such a dualism leads to a Kantian type of agnostic transcendentalism, and leaves the question how the content of judgment could refer to the real subject of the judgment unsolved. Moreover, the doctrine that the real is always a limitation and control of activity is open to the same objection as the view criticized above. It implies a realm which is but is not real.

3. Satisfaction or immediacy as control. By means of love and will we reach a point to which thought unaided can not attain, a point where conscious effort and discursive analysis cease. Objection is made (a) that this view also recognizes a realm which is but is not real, (b) that its 'reality' is identical with what we ordinarily mean by nothing, or reality at large, and (c) that it is a form of self-indulgence which easily becomes unmanly and immoral. These three conceptions of the real as control emphasize aspects of the objective. They do not give us an adequate account of the real. Appeal to what might be called social control does not relieve the difficulty.

The Ugly Infinite and the Good-for-nothing Absolute: CHARLES M. BAKEWELL.

Ever since philosophy emerged from the hylozoic age it has been pursued by the antinomy of the infinite and the absolute. By infinite is here meant the boundless, the *ἄπειρον*, the endless regress, which is implied in empiricism, as the idealist views it; and by the absolute the fixed and definite and final, whether as standard of reference, scale of worth or world of meaning, which is the flaw in idealism as viewed by empiricism. It is not too much to say that most of the discussions of fundamental problems in philosophy center in this antinomy. When philosophical discussions wax polemical, then one's opponent is supposed to have embraced simply one side of the antinomy, while blindly ignoring, or shamefully belittling, the

reasons which make for the other side. This granted, the logical difficulties of his position are easily made evident, and adjectives of abuse add warmth to the discussion. In earlier times the partizans of the absolute held sway, and the infinite, to which their opponents were said to be committed, was dubbed 'ugly,' about as strong a term of reproach as the Greek could find. In recent times, and partly owing to the conquests made by the theory of evolution in all fields of knowledge, the partizans of the infinite are coming to be more and more boisterously in evidence, and they are returning the compliment. Their opponents' view leads, we are told, to an absolute which is 'good-for-nothing,' as abusive an epithet as one can find in our strenuous and utilitarian age. All who are not radical empiricists or immediatists, all who hold a doctrine of transcendence, are declared absolutists. Passing by the realists who, from one point of view, must be ranked with the absolutists, and confining our attention to the idealists, these fall into two fairly distinct groups according as their real-ideal is taken statically or dynamically. The former group may, with some show of plausibility, be charged with introducing the conception of an absolute which is useless in the interpretation of experience. Yet even here, as tested by actual results, the charge can not be fully made good; and what measure of utility this conception of the absolute possesses is readily explicable in the light cast back upon it by the more developed forms of dynamic idealism. As applied to the latter group, however, the charge is wholly without force. It rests upon the assumption that because the idealist believes in a world of eternal truth where values are assessed with finality he must, in order to make any significant use of such a conception, himself have had this completed vision. The idealist does not 'affect omniscience.' He begins with experience just as he, with all his feebleness and limitations and ignorance, finds it. But he finds the value of the conception of the fixed of dynamic idealism in making intelligible the possibility of working away from this starting-point by definite and sure steps into a world of meaning where nothing is ever lost. Progress is progress, and not simply change, because a less complete view can once for all be set aside in favor of a more complete, and this is clearly intelligible only provided they all have their position fixed in a scale of worth and meaning which we are gradually finding out, but which we do not make as suits our passing mood or present state or present felt need. This conception is one upon which we lean in every step in our search after truth and reality, and it is our continual, though sometimes tacit, dependence on it that gives us our faith that the game is worth while.

Are Time and Space of Coordinate Philosophical Significance?

HENRY RUTGERS MARSHALL.

Our concepts of time and space are based upon our temporal and spatial experiences. 1. Our temporal experiences are determined by the existence, in connection with presentations, of some phase of time quality, which is a general quality of all presentations and which, like the algedonic quality (pain-indifference-pleasure), displays three phases, pastness-presentness-futureness. One of these phases must attach to each specific presentation, as is shown by the fact that each presentation is discovered to display some one of the three time phases if we choose to look for it. The time quality thus appears to be a general quality of all presentations. That is to say, no presentation is ever timeless. 2. Our spatial experiences are determined by the existence in connection with presentations of what we may call the spatial quality. If this spatial quality is a general quality of all presentations, as the time quality is, then we should find that all presentations are spatially qualified, and that no presentation is non-spatial. But this proves not to be the case. For although a large proportion of our presentations are spatially qualified, some of them are not. As instances of presentations which are not spatially qualified we may note the group of concepts which can not be traced back to percepts, *e. g.*, 'factor of safety,' 'virtue'; and especially the so-called 'feelings of relation,' *e. g.*, what Professor James calls the 'feeling of *but*,' which, as he says, is as definitely a presentation as a 'feeling of blue.' These concepts and 'feelings of relation' are definite presentations, but they are not spatially qualified, *i. e.*, they are non-spatial. 3. The spatial quality thus appears to be not a general quality of all presentations, as is the case with the temporal quality, but a special quality which attaches to a very large proportion of, but not to all of, our presentations. The temporal quality and the spatial quality thus appear to be on different planes, so to speak; and this leads us to ask whether, in consideration of the fact that our concepts of time and space are based respectively upon our temporal and spatial experiences, we are justified in classing time and space together and treating them as of coordinate philosophical significance, as is so commonly done in metaphysical writings of modern times.

Some Inadequacies in the Modern Theories of Judgment: W. H. SHELDON.

The problem of judgment comprizes three questions: the make-up of its content (both psychical and logical), the purpose which that content serves, and the fitness of the content to fulfill the purpose. These are the questions of structure, function, and their mutual

adaptation. The generally accepted modern theory has revealed the *function* of the judgment-content (to refer to reality or to suggest action upon the environment); many logicians also have worked out theories of *structure* (the individual-universal theory, the stimulus-reaction theory, the synthesis theory, the partition theory, etc.), but scarcely any one has attempted to show *how the structure is adapted to the function* of suggesting reality. Herein lies the inadequacy of modern theories of judgment.

Descriptive and Normative Sciences: ERNEST ALBEE.

The distinction between the descriptive and the so-called 'normative' sciences has come to be a seriously puzzling problem for philosophy. The dualism implied is distasteful even to common sense and to physical science, and the first step in the direction of reflection is usually to hold that science proper deals with reality, while the so-called 'normative' sciences or disciplines are more strictly arts. But even the sciences which take the factual or existential point of view become progressively technical, and therefore abstract, as the true problems and methods of the science in question become more clearly defined. Hence the developing ideal of each science becomes, in a sense, normative for the procedure of that science. On the other hand, the so-called 'normative' sciences also deal with reality. For example, modern logic primarily seeks to explain what knowledge is and what it implies. But as knowledge develops in the direction of its ideal of organization, it becomes as a result more and more real—a highly suggestive example, which goes to prove that, in some fields of investigation, at least, the real and the ideal tend to converge. The same line of argument applies to ethics; for conduct, like thought, becomes more truly itself in proportion to the degree of achieved organization. The true distinction between the descriptive and the so-called 'normative' sciences is, that the former take the factual or existential, the latter the teleological, point of view; but objectivity of treatment is as possible in the one case as in the other. In fact, true objectivity must always, in the end, be exhibited in teleological terms. In a word, the difference is that between explaining experience from without and from within.

Knowledge as Immediate Experience and a Function of Love: LEWIS F. HITE.

The knowledge of concrete experience, in so far as it is reflective, is relational and more or less systematic, but such knowledge presupposes immediate knowledge and rests upon it as its basis. Immediate knowledge is one unique, simple, complete experience—a whole, self-existent and self-sufficient, which contains in itself, unified and har-

monized, all the complexity, variety and relations that subsequently, by the developing processes of attention, reflection, analysis and synthesis, grow out of it. Experience has two aspects, cognitive and emotional. The cognitive is that which is presented in the function of self-representation. Experience in its first intention is immediately self-conscious. In other words, knowledge is a function of experience such that the unique and individual existence of a given experience is self-represented as this precise kind or quality. For example, the experience of the blue sky is the existence of the blue as the precise quality of this self-represented experience. The paper devotes considerable space to showing in detail the nature of immediate knowledge by means of a construction which supposes a man placed under conditions where the only experience he can have is that of the blue sky. Then the situation is developed by adding sound, and finally by supposing all the senses to be opened at once. It is assumed in this case that there would be complete blending, and that the experience would be of the same type as the simple blue. It is maintained that the cognitive aspect of this experience is its existence as its own precise, unique kind or quality. The emotional, esthetic and voluntary aspects of the experience are interpreted and developed as characters which are otherwise covered by the general term love. Love, in accordance with Swedenborg's doctrine, is taken as the fundamental and all-inclusive experience. In other words, experience at bottom is love, and all the functions and characters of experience are developments of love. Love in the process of self-representation presents that aspect of experience which we call knowledge. Knowledge as a complete, systematic whole would be the final stage of this process of self-representation.

Cadwallader Colden of Kings College: I. W. RILEY.

Cadwallader Colden (1688-1776), a graduate of Edinburgh University, lieutenant-governor of the province of New York, and an early patron of Kings College, was the first and foremost of the American materialists. A friend of Samuel Johnson, the idealistic head of the college, the correspondence between these two reads like veritable Berkeleyan dialogues between Hylas and Philonous. Assuming that substance is power and force, Colden formed a system of dynamic panpsychism somewhat in the manner of Toland's 'Pantheisticon,' yet with peculiar variations of its own. A reactionary against Descartes, Colden was neither a local Leibniz nor a colonial Spinoza; opposing the doctrine of the possibility of matter, he neither granted it the perceptions of the monad nor treated it as a necessary mode of the one only substance. A follower of Hobbes, he was a materialist and yet not a total determinist; in his physics he limited the activities of matter in accordance with their created

essence, and in his metaphysics granted freedom of will to intelligent agents. Finally, a disciple of Newton, he was a dualist and yet not without a tendency to monism; he granted the existence of intelligent agents and unintelligent matter, and still comprehended both under the loose conception of a plastic principle. Colden's position in the development of American thinking was in advance of the ordinary eighteenth-century deism, anticipating to a degree the New England transcendentalism, and issuing in a movement essentially modern—the resolution of matter into mechanics of energy.

Philosophy and Religion: A. T. ORMOND.

The Meaning of Moral Goodness: RALPH BARTON PERRY.

The phrase 'moral goodness' signifies distinguishable and definable properties, possessed by certain objects or groups of objects, but capable of being abstracted; *i. e.*, moral goodness is a conception. The aim of the present paper is the elucidation of the real moral goodness contained in experience, but only imperfectly discerned in moral sentiment and opinion. The necessity of employing the terms moral and goodness to qualify one another proves that the conception of moral goodness is not simple. There is a morality that is not good, and a goodness that is not moral. In order, therefore, to define moral goodness, it is necessary to distinguish a field of moral values within which moral good, moral evil and moral indifference are systematically related. Values which approximate morality appear when an organism is introduced into a mechanical system. Mechanical objects and mechanical action now bear favorably, unfavorably or indifferently upon the organism's preservation, and may be said to be good, bad or indifferent accordingly. These values are strictly extrinsic—and may be termed material or potential values. At the same time there appear the values proper to the organism itself. The elementary organism is an organization whose action is determined, at any rate in part, by the law of its own preservation. Such action possesses value through its reflex consequences, whether beneficial, injurious or indifferent. Goodness, badness and indifference, of this type, may be termed biological values. In the elementary organism there is but one undifferentiated interest, the instinct of self-preservation. Such acts as answer to this instinct do not as yet possess moral value. Such value arises only when simple interests become differentiated or affiliated in such wise as to form higher synthetic interests. The former appears in the case of the individual self, the latter in the case of the social group. In both cases the subinterest possesses moral value in consideration of its bearing upon the controlling interest. In so far as the sub-

interest contributes to the controlling interest, it possesses moral goodness; in so far as it detracts from the controlling interest, it possesses moral evil; and in so far as it is inappreciable in either respect, it possesses moral indifference. Moral value in the above sense may be attributed to interested action, or conduct, to self-determining individuals or selves, to institutions, to social groups, to ideals and to principles.

A Factor in the Evolution of Morality: F. C. FRENCH.

Evolutionary writers in general have given far more attention to the objective than to the subjective side of the moral life. Action for the good of others determined by instincts, habits, sympathetic impulses and the like appeared at an early stage of animal life, but conscience as a sense of duty and personal responsibility does not emerge until a considerably later period in human development. Many facts point to the view that primitive self-consciousness was a group-consciousness rather than an individual self-consciousness. This paper aims to show that the first rudimentary form of moral obligation is found in the taboo idea. Certain things are regarded as unspeakably dangerous, and these must at all cost be avoided. If contact occurs by necessity or by accident the person becomes infected by a sort of material contagion. He becomes himself in turn an object of danger, and must be tabooed until by some process of purification the infection has been removed. Various things are subject to taboo among different peoples, but blood, a corpse, a newborn babe and its mother are almost universal objects of taboo the world over, as are also sacred things, *i. e.*, whatever is associated with a people's religious rites. The taboo concept includes both the sacred and the accursed, the holy and the unclean. The impurity of the taboo object has nothing to do with our notion of uncleanness. At a later stage of religious development (*e. g.*, among the Hebrews) the taboos are regarded as commands of the Deity, but this is an *ex post facto* explanation. Earlier than any organized religion, man learns to dread the mysteriously dangerous, and to avoid the same. The mysterious is dreaded as containing some dire infection which must be avoided, by either non-contact or ceremonial purification. 'Touch not the unclean thing' is the first categorical imperative. This primitive imperative, ethical in form, but for the most part unethical in content, affords exactly the stepping-stone that we need to bridge the chasm between the non-moral and the moral. Various writers on taboo have claimed for it great influence in developing respect for property, marriage and human life; its deeper and more essential ethical value, however, was in giving the first impetus

to the birth of that sense of oughtness which has made man a responsible moral being. Taboo is conscience in embryo.

Some Requisites of a Theory of Ethical Values: WALTER G. EVERETT.

1. A preliminary question is that of terminology. Shall we speak of any human values as absolute values? The existence of absolute values, in the stricter sense of the term, implies the existence of an absolute, all-embracing consciousness. But even if this hypothesis be accepted, the immediate identification of our human values with these absolute values is unwarranted. Again, if by absolute values is meant unconditional values, it must be replied that we have no experience of any unconditional values in human life. Finally, if by absolute values is meant simply that there are certain general categories of value beyond which analysis can not go, they might with more propriety be called ultimate, or fundamental, values.

2. Another requisite is a clear distinction between a principle of motivation and of valuation, or between the desired and the desirable. The disregard of this distinction vitiates all purely voluntaristic theories of value when applied to the field of ethics. This defect appears in the work of Ehrenfels, whose theory is more adequate for economic than for ethical values. Meinong, while making value a function of feeling rather than of desire, identifies feelings of value too closely with immediate feelings.

3. Value attaches to conscious experience, apart from which no value is conceivable. This thesis would not, perhaps, be generally challenged, but it is doubted by Mr. E. G. Moore ('Principia Ethica,' pp. 83-84). Mr. Moore, however, destroys his own hypothesis of value apart from experience by introducing a reference to consciousness at the very moment when he seeks to dispense with it.

4. Still another requisite of a theory of ethical values is the determination of the relation of states of feeling as agreeable and disagreeable to experiences of value, positive and negative. The importance of this problem for ethical value can not be disregarded. Apart from states of feeling as agreeable and disagreeable, all facts would be indifferent in value. This state of feeling must be one element or aspect of moral values as of all others.

5. But corresponding to the peculiarly subjective element of feeling, there is in moral values an objective element. This objective element may be expressed as perfection of function. An organic relation may be established between this objective factor and the subjective element of feeling. Herein is found the true synthesis of hedonism and perfectionism.

6. A still further requirement is the discovery of the relation between ethical values and other values, economic, esthetic, etc. While other groups of values exist as objects of investigation independent of ethics, all these are

related to ethics as objects of choice for the content of life as a whole. And just this regard for the total interests of life, as against particular or temporary interests, constitutes the special view-point of ethics.

SECTION OF ANTHROPOLOGY AND PSYCHOLOGY OF THE NEW YORK ACADEMY OF SCIENCES

REPORT OF THE SECRETARY

A MEETING was held in conjunction with the New York Branch of the American Psychological Association, on November 26, with an afternoon session at the psychological laboratory of Columbia University and an evening session at the American Museum of Natural History; members dined together between the sessions at the Faculty Club, Columbia University. An invitation from the Yale Philosophical Club to meet with them in April was tendered by Professor Judd, and accepted by the joint societies.

The first paper, by Dr. F. Lyman Wells, on 'Linguistic Ability and Intellectual Efficiency,' was published in full in this JOURNAL for December 6, 1906.

Dr. Kate Gordon presented the results of experiments on the 'Esthetics of Simple Color Arrangements.' She sought to arrange colors in a field in a manner somewhat similar to the usual massing of colors in a painting. Her figures were composed of large and small triangles of color arranged symmetrically about a point, and with bases turned toward each other. Red, yellow, green and blue were the colors used, and these and the triangles were arranged in all possible ways within the limits indicated. These colors differed greatly in brightness, and the results so far seem to show that preferences depend almost entirely on the arrangements of brightness. Small bright triangles surrounded by large dark ones were uniformly preferred. By control experiments it was found that this result depended partly on a preference for small masses in the center surrounded by large masses, and partly on a preference for brightness surrounded by darkness. The results could, however, be reversed by certain accessory figures. The preference for a certain arrangement of colors did not depend on a preference for single colors; the latter preference was also studied, with the result that different colors were preferred according as the background was light or dark; on the whole the order of preference was red, blue, green, yellow. The preferred combinations were red and green, yellow and blue.

Professor A. H. Pierce, in a paper on 'Gustatory Audition,' described an interesting case of a new form of synesthesia. The subject is a young lady, now a college senior, and it is important to note that she has a slight and variable deafness and apparently complete anosmia. She experiences gustatory and other mouth qualities on the hearing of words. Each word feels as if some article of food were in the mouth and giving the complex of buccal sensations which its actual presence would arouse. The gustatory equivalents are permanent, being found the same after a lapse of six months. It has been impossible to detect any system in the equivalencies, as the same sound, such as a labial, produces very different gustatory feelings. There is more agreement in regard to the vowels. Inarticulate sounds, excepting the high notes of the piano, do not give gustatory experiences. Some facts which point to the case being one of true synesthesia rather than of associated imagery, are: that the experience comes unsought; that it often precedes the name of the substance tasted, the name being found only after search; that some of the experiences are sharply located and located right, according to the position of the corresponding end organs; and that when in doubt the subject often presses the cheeks inward to strengthen the impression. The case and its interpretation were discussed at some length by the meeting.

Dr. Harvey Carr presented the results of experimental work on 'The Pendular Whiplash Illusion of Movement.' This illusion has been interpreted by Dodge as depending on the non-perception of movement in an object which is perfectly followed by the eyes, and consequently as indicating that the feelings of eye movement do not furnish the basis for the perception of movement. Dr. Carr's measurements show that the object followed by the eyes is seen to move till nearly the end of its swing, and that the illusory appearance of motion in the swinging object which is not regarded, after the object which is regarded has apparently come to rest, is due to the progressive disappearance of the after-image streak. An opposite and very curious illusion can be produced by placing both objects on the same arm of the pendulum and regarding the object whose swing is the longest. The after-image streak of the other object then disappears progressively in the direction opposite to its real movement, and gives the appearance of an object moving in one direction while covering distance in the other direction if at all.

The evening session began with a paper by Professor MacDougall on 'Imaginative Thought as Adaptive Reaction.' The following is the author's abstract of his paper: The adaptive responses of organisms differ in complexity, immediacy and persistence. The lower form makes simple, direct responses involving few determinants; the

higher are characterized by sustained and complex reactions based upon intricate processes of apprehension. The introduction of a system of ideas between stimulus and reaction serves the furtherance of adaptation in two ways: it supplements the nature of the presented stimulus by a representation of its significant associates, and it increases selective discrimination in the choice of reactions. Representative thought is thus, from the biological point of view, a device by which economy of action is attained through the elimination of unfit alternatives at the level of imagination instead of at that of movement. When divorced from association with immediate practical results, thought still preserves this function in the economy of life. The plastic imagination is occupied with the representation of events and situations for which it constructs a series of ideal solutions. Adaptive reaction is rendered more efficient by the organic exercise which imagination thus provides. Through the freeing of thought from its practical relations an independent value is secured to all its manifestations. This element of absolute worth is embodied in each of the two forms of thought to which the primitive discriminative reaction has given origin, namely, to productive imagination and to analytic reflection. The former is a free treatment of the concrete situations of life according to principles prescribed by esthetic motives, and gives rise to the system of arts; the latter is a thoroughgoing exploration of the stimuli to action under a logical motive, and gives rise to the system of sciences.

Brother Chrysostom offered some thoughts on the subject of 'Psychology and Spelling,' emphasizing particularly the great difference between the mistakes in spelling of good and of bad spellers, and the consequent need of treating the two classes differently in teaching. This led him to urge the importance to education of organized and authoritative promulgation by psychological associations of the facts and laws of psychology that bear on the problems of teaching.

The last paper of the evening was presented by Professor Dewey, on 'Knowledge and Judgment,' from which the following are extracts. Judgment involves thinking, the evaluation or estimation of what is judged with reference to some end, practical or logical. In thinking, a thing is consciously subordinated to something else, either as an index to some fact or as a means to some end. Knowledge is opposed to thinking: when we know, we do not have to think. Knowledge is self-sufficient, self-contained. Judgment, however, always starts with knowledge and aims at knowledge. Knowledge is useful only as furnishing a basis for thinking. What guarantee have we that knowledge is knowledge? All experience in itself has the same reality; there is no grading of reality from its own point

of view. The only legitimate grading of reality is on the basis of its significance. Apart from thought, then, all things are equally real. From the point of view of reality, it is presumptuous to pick and choose, to select a certain cause to go with a certain effect, or to single out two particular things as coexistent. Such selections are only made for the purposes of thought. It is its usefulness as a basis of thinking that furnishes the guarantee of a piece of knowledge.

COLUMBIA UNIVERSITY.

R. S. WOODWORTH,
Secretary.

REVIEWS AND ABSTRACTS OF LITERATURE

The Subconscious. JOSEPH JASTROW. Boston and New York: Houghton, Mifflin & Co. 1906. Pp. 549.

The last decades have done a great deal to enrich the storehouse of psychological experience in directions for which the cut and dried scholastic psychology of the oughts and should-be's had had little encouragement. For years tabooed by the professional psychologist, exploited largely by enthusiasts, and therefore exposed to many a peculiar distortion, the data of the 'subconscious' have been made the topic for popular and semiscientific and partly misleading entertainment. Jastrow's book intends to be a serious cicerone in the mooted fields. With a sound and sane view of the material, but with, unfortunately, a rather studied style of presentation, he has devoted one hundred and fifty-six pages to the normal, two hundred and forty-five to the abnormal and a third part of one hundred and thirty-two pages to the theoretical issues of the 'subconscious.' The mode of presentation is, indeed, the cause of a long delay in this review, and of a conflict, in the mind of the reviewer, between the desire to make accessible the many excellent collections of material scattered through the book and the difficulty attending any continued reading among the painfully long similes and the distracting evidences of literary effort. Over and over again one feels the lack of directness in the strings of evidently most carefully balanced sentences. The rich material of the much better told observations is too often hidden in the elaborate context, and one but rarely meets with a clean-cut statement of perspective such as the one on page 294, summing up fundamental results in the psychology of hypnotism. Similarly there is but rarely a hint as to how to correlate the author's view with the efforts of others towards a clearing of the atmosphere. It is indeed difficult to say to what kind of public the book would adapt itself. If this review draws the attention of the student of psychology to the chapters which contain contributions or collections of material, the best service is rendered the author and reader, and it should balance the painful duty of having to give a rather unfavorable verdict of the setting the material gets.

The first seven chapter headings—'The Function of Consciousness,' 'Consciousness and the Nervous System,' 'Consciousness and Volition,' 'The Distribution of Attention,' 'The Mechanism of Consciousness,' 'The Subconscious in Mental Procedure,' 'The Subconscious Maturing of Thought'—suggest most interesting and well-chosen topics, but to the uninitiated the chapters are not clear and to the one who has raised these and similar problems the result of the perusal is disproportionate with the labor. If the most kindly and attentive reader would undertake to supply chapter headings according to the results of his study of each chapter they would hardly coincide with the headings of the above disposition, taking for granted that he really could venture on the attempt of giving sufficiently distinctive headings. Many excellent groups of material are scattered through the one hundred and fifteen pages; but one would be unable to place them from memory.

The next chapter, on 'The Lapses of Consciousness,' is a most excellent collection of experiences. Whether the notion of 'lapses of consciousness' is the best psychological perspective of these striking anecdotes of *Zerstreuung* is, however, doubtful. We see here plainly how unfortunate it is to use consciousness as a criterion of mental activity and at the same time as meaning 'greater consciousness than the subconscious.' When those of us who seriously deal with these facts and experiences speak of lapses of consciousness, we would want to imply something broader than lapses of attention and lapses of memory, and we would want to group them according to kind, and according to their effects, and where possible according to their excuses or 'causal' conditions. If taken as a chapter on types of distraction, it is one of the best ever presented; but as such they had possibly best be called 'lapses' in the manner of Professor Bawden, without any further reference to consciousness. That dream consciousness is made to figure among the abnormal states shows how ill advised a division of normal and abnormal is in such a field. The chapter dealing with this subject and the one following, on 'The Variants of Dream-consciousness,' contain many valuable accounts, and the latter especially a valuable collection of experiments with drugs. Under 'The Dissociated Consciousness' Jastrow gives a brief sketch of somnambulism, hypnotic experiences and hysteria, and he then passes to the 'Genesis of Altered Personality' (really a descriptive review of the well-known cases of Flournoy and Morton Prince) and 'Disintegrating Lapses of Personality' (Felida X., Mary Reynolds, Emile X., Louis V., Bourne, etc., and the case Hanna). It is rather difficult to draw any general principles of the mechanism of the disorder from the statements. We miss in many places both the lucidity and the practical ingenuity of the presentation of a Janet, and the description of the actual working out of changes in the condition.

The theoretical part discusses first the conception of the subconscious. As a very plain instance of threshold phenomena Jastrow mentions a modification of the illusion in comparing lengths of lines with divergent and convergent strokes, if these distracting lines are reduced to such a degree of faintness that the eye fails to detect their presence.

The 'undetected' shadows will still incline the judgments in accord with the illusion. "For this manner of devious influence *upon* consciousness, but seemingly not *through* consciousness, the term subconscious seems peculiarly fitting" (p. 418). Whether varying degrees of certainty of discrimination had best be explained with the principles of 'subconscious activity' is somewhat questionable. Practical results are compatible with quite modest analytical proficiency. Jastrow clearly states that the senses have not a uniform 'conscious' value. The whole problem of sensation might easily be made the central issue of much that is here referred to as subconscious procedure. It seems to the reviewer that excessive faith in 'sensation' as the stuff of which almost all, if not all, mental material should be supposed to consist, upholds an unbiological attitude in psychology, and with it a tendency to avoid the inquiry for a difference in *kind of relationships and working* rather than the evidently not wholly measurable criterion of consciousness to decide whether we deal with mental or other types of biological reaction. "Acquisition, elaboration, expression, compose the triumvirate that direct the affairs of the mind" (p. 437). Acquisition is treated rather fully, also the motor issue. The elaborative procedure, which to my mind would deserve most careful search, is rather meagerly discussed. In the main the tripartition does not help us far along. In the abnormal field it has its counterpart in anesthesia, hallucination and impulsion (p. 497), an altogether too meager frame or scheme of samples for the wide range of phenomena of dissociation.

It is evident from this and other writings of the author that he is quite free from the mystical hankerings which mislead such a large portion of the miracle seekers in our public. It is all the more regrettable that the material is not offered in a way which will make it possible to avail one's self of the guidance of the author. It is indeed to be expected that many an eager reader will turn the materials into the trend of his own predilections with very scanty warning.

Jastrow's own review of the principles (p. 518, etc.) is one of the simplest and most direct parts of the book. Abnormal dissociations are due either to shock or to a developmental flaw. Personality is not an inevitable datum, but an achievement, with a possibility of impairment of the joint realms of incorporation, orientation and initiative, either as an expression of the unsettled promptings of adolescence or as a summary dethronement. The distinctive quality and manner of the impairments considered by the author furnish their essential clue in the analysis of hysteria. Normally performed complexes become recrystallized on the ground of hysterical enfeeblement; there is a varying loss of relation between the dissociated and normal activity, and a varying complexity of the dissociated conduct. In its lesser forms it denotes an exaggerated disposition and extension of such deviations as susceptibility to hypnosis—often (?) affiliated with other phases of psychic shortcoming—and it is perhaps best to restrict the term defect to its psychological sense without implying any judgment of inferiority or lowered moral esteem. "Our ignorance of just what takes place in the mental estate when the partial

and at times enforced relinquishment ensues, that introduces so altered an economy of its resources, is but part of our limitations of knowledge of the intrinsic nature of the mental movement. The most promising outlook for the lessening in any measure of these limitations is by a discerning cultivation of the abnormal field under guidance of principles that find their surest support in normal psychology."

Many pertinent matters which have proved very helpful and suggestive are scantily used in this volume. The very lucid St. Louis address of Morton Prince, which deals with some very accessible and practical issues of the 'subconscious,' the studies of Freud, Jung, etc., and many of those of Janet, evidently find no favor with Jastrow, since he does not even mention them or their contents.

It becomes more and more evident that the caption 'subconscious' will soon share the fate of the term consciousness, and cease to be a topic; it would be better to realize that there are in the stream of mental activities leading activities and less prominent ones; some closely connected with the leading trend, others more independent or perhaps truly dissociated; some more likely to weigh in the determination of the general trend than others, etc. This would seem to be the very field in which dynamic conceptions will have to find their way into psychology; and as soon as dynamic issues are in the lead, the 'conscious' or 'subconscious' nature of the event under study will be of interest according to the clearness of the conditions and *mechanism* of submersion and dissociation. In the meantime descriptive-analytical surveys are very welcome. But for a presentation of this topic the first condition is a sufficient simplicity and some consideration for the reader who seeks information and guidance, and whose trend of thought and interests should be met half-way, or at least part of the way, so as to make available the three 'privileges' of the mature psychic procedure, incorporation, orientation and initiative (p. 483). The emphasis of some leading perspectives in another edition will do very much indeed to make the author's wealth of exemplification and expression a pleasure instead of a burden.

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JOURNALS AND NEW BOOKS

ZEITSCHRIFT FÜR PHILOSOPHIE UND PHILOSOPHISCHE KRITIK. October, 1906, Band 129, Heft 1. *Edward von Hartmann* (pp. 1-33): A. DORNER.—Hartmann's psychology is self-contradictory because it makes consciousness at once a function of the brain and also, in its capacity to form ideals, superior to nature. His ethical goal merges into the religious, *viz.*, knowledge of God, a knowledge in which God and the individual seem to disappear together. His religion is really to be found in his esthetics. His metaphysics displays the fundamental inconsistency of pessimism, an order evolving from 'alogical' potentialities. Yet his doctrine of the categories prevails in Germany. *Quellen und Wirkungen von Jakob Boehmes' Gottesbegriff* (pp. 33-47): A. BASTIAN.—Boehme differs from Spinoza chiefly in making evil a positive element

in the divine harmony. Among Post-Kantians Schelling fails to distinguish between God's inner life and his outward life in the world, but otherwise differs little from Boehme. *Ueber die Stellung der Gegenstandstheorie im System der Wissenschaften* (pp. 48-93): A. MEINONG.—There are judgments and knowledge independent of the existence of objects to which they refer, for all science rests on the assumption of such 'impossible objects' as zero, 'whose existence is equivalent to its non-existence.' Mathematics is hypothetical and this independence of existence extends to other sciences, in so far as they are *a priori* in method. *Bericht über die italienische Philosophie des Jahres 1905* (pp. 94-104): C. D. PFLAUM.—No particular work is singled out from the numerous publications which are briefly summarized. *Rezensionen*: H. Kutter, *Das Unmittelbare, eine Menschheitsfrage*: G. VORBRODT. J. DORNER, *Grundprobleme der Religions Philosophie*: VORBRODT. Esther L. Axelrod, *Tolstoi's Weltanschauung und ihre Entwicklung*: H. GOEBEL. *Notizen*. HOBHOUSE, L. T. *Morals in Evolution*. A study in comparative ethics. In two volumes. New York: Henry Holt & Co. 1906. Pp. vii + 294.

NOTES AND NEWS

At the recent meeting of the American Association for the Advancement of Science President Butler, of Columbia University, made the following observations in the course of his address of welcome: "I am one of those who now for nearly thirty years have observed at first hand the slow, and then the rapid, advance of the sciences to their present place in the school and college programs of this country. It has been my fortune to listen to and sometimes to participate in the discussions and debates which have accompanied that advance. So far as I now recollect, every vote that I have had to give has been given in its favor. But now at the end of this period I can not help feeling, and I observe from reading the literature of the subject that the same feeling is shown in England, in France and in Germany, that we have not yet succeeded in so organizing the sciences as instruments of general education as to fulfill the high expectations which some of us formed for them nearly a quarter of a century ago. . . . There can be little doubt that the sciences of nature and of man, properly organized and presented as educational instruments, are destined to be classified as true humanities. I can not help feeling that in addition to their power to instruct and inform, they have a power to refine, to uplift and to guide; but I am quite confident that as yet we are very far short of having so organized this material as to attain these ends." President Welch, who responded to the address of welcome, said in reference to the remarks above quoted, that the formation of the new section for education was a recognition of what President Butler had pointed out, and that it was hoped that the work of this section might contribute toward a solution of the problems alluded to. President Welch continued as follows: "It may also be admitted that exaggerated claims have sometimes been made as regards the position which the natural sciences should hold in the scheme of

general education and as regards the extent and kind of mental discipline, culture and knowledge which, when pursued in such a scheme, they are capable of imparting. Without attempting to assign to these sciences their exact share in a plan of liberal education, and this share, I need hardly say, I deem an important one, I should be sorry to see eliminated from the education of even those looking forward to scientific pursuits the study of the languages, history and philosophy, which give a culture not to be derived solely from the study of the natural sciences and which should add greatly to the intellectual pleasure, satisfaction, breadth of vision and even efficiency of the man of science. Natural science should take its place in a plan of liberal education by the side of the older learning, the so-called humanities; each affords a kind of culture not to be obtained from the other, and any scheme of higher education which does not recognize the equal value of both kinds of culture is one-sided."

At the same meeting the following were among the more important actions of the council and the association. The addition of a new section to the association, namely, Section L—Education. A petition in favor of the formation of such a section was presented to the association to which were affixed the signatures of one hundred and seventy-one men, including many of the most prominent educators. The title of Section H was changed from 'Anthropology' to 'Anthropology and Psychology.' A standing committee of five on the bibliography of science was appointed, one of whose duties shall be to cooperate with the International Catalogue of Scientific Literature. The committee consists of J. McKeen Cattell, R. S. Woodworth, Jas. Lewis Howe, Wm. Trelease and C. B. Davenport. A Darwin Memorial Committee of ten was appointed to consider the manner in which the American Association for the Advancement of Science may suitably commemorate the fiftieth anniversary of the publication of the first edition of the 'Origin of Species.'

ON January 22 Professor William James announced his withdrawal from active teaching at Harvard University. His advanced students presented him with a silver loving cup. Professor James will continue a member of the Harvard Faculty, but will devote his time chiefly to writing. Although this decision of Professor James will be to the advantage of non-Cantabrigians, the host of those that are indebted to him for teaching and inspiration can but feel deep regret at seeing the dean of American psychology terminate his career in any particular. Professor James has taught at Harvard since 1872.

Under the Departments of Philosophy and Psychology of Columbia University a course of eight lectures will be given by Professor James, on 'Pragmatism, a New Name for an Old Way of Thinking.' These lectures will be held in room 305 Schermerhorn, at 4:30, as follows: January 29, 'Philosophy and Life'; January 30, 'The Pragmatic Method'; January 31 and February 1, 'Examples of its Application to Old Philosophic Questions'; February 5, 'Pragmatism and Common Sense'; February 7, 'Pragmatism and Humanism'; February 8, 'Pragmatism and Religion.'

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE POETRY OF ANAXAGORAS'S METAPHYSICS

*καὶ τῆς περιχωρήσιως τῆς συμπάσης νοῦς ἐχράτησεν, ὥστε
περιχωρῆσαι τὴν ἀρχήν.*

EVERY child, and for that matter, too, every man, knows the peculiar satisfaction that comes whenever the meaning or a leading and definite hint of the meaning of some familiar and important word has been discovered. The experience is just uplifting, as with the power of new insight affecting not merely the things immediately involved, but also all the manifold relations of life, and it makes us laugh, noisily or quietly, at our former, unsophisticated selves, even while we feel the deeper thought, or the deeper life, that the discovery has made possible. Mark Twain's tale of Eve suggesting to Adam that they call the toad a toad because it looked so very much like a toad is as interesting to the philosopher as to the humorist. Indeed, generally, though doubtless I ought to say it with apologies to Mr. Clemens, the philosopher and the humorist are most congenial spirits. Some minds, plainly, are quite too sober and prosaic for any real insight. Naming strange things is not their forte. Thus, to come to the matter now in hand, the same humor and the same suggestion of insight which belong so richly to the tale of the toad appear, but magnified and deepened, in the tale, so dramatic in the history of philosophy, of Anaxagoras running upon something in his world that he decided—whether with his wife's aid or not, we do not know—to call mind just because it looked so much like mind.

The word mind (or must I not say the word νοῦς?) had been in his vocabulary and in the language of his race ever since he, or they, could remember, but at a great moment—and how great that moment must have been!—out of the depths of his thinking, or out of the depths of their thinking in him, he at last caught sight of something which so resembled mind that it could be known directly and distinctly by the familiar name. Why, in the very face of my detractors—of course, only my make-believe detractors—who might be

too prompt to applaud, I could even wish that I had lived in Anaxagoras's day, envying him for that moment as I do. Still, not all the manifold and multiform animals in life's garden have yet received the names of what they look most like. I may, therefore, let this dangerous envy of one who gave such signal aid to Adam and Eve give place to a very present ambition, however vaulting. Is not Anaxagoras's philosophy, pagan though it was, even now worthy of a christening? My title for this paper shows I think it so. His philosophy looks so very much like poetry. Perhaps even Eve was a poet.

What was that philosophy? How did Anaxagoras arrive at his peculiar and, certainly in his time, strikingly original views? By what reasoning, even by what unwitting logic or unconscious cerebration, did he discover just that special thing, visible distinctly at least to his mind's eye, which he decided to call by the name of *νοῦς*? These are now the natural questions in the case and, premising that even in metaphysical thinking, whenever the cerebration is unconscious, whenever the logic is, as in some measure certainly it always must be, 'inner' instead of fully explicit and sophisticated, the resulting doctrines are bound to be figurative or poetic, I would venture, for Eve's excellent reason, the following answer.¹

The point of departure, probably of Anaxagoras's own thinking, but in any case of the present examination of his ideas, is the cosmopolitan individual, so timely in that golden, perhaps sunset-golden, day of Pericles, or it is, if I must escape the charge of pragmatism by hiding behind metaphysical technicalities, his whole-containing part or element. Anaxagoras was a pluralist of a special type, and he appears to have reached his peculiar pluralism through application of the always logically productive operation of infinity to the fact, or to the idea, of mixture. Mixture, of course, had been much in evidence in previous speculations and it was conceived mainly, if not wholly, in quantitative or physical terms. Anaxagoras, accordingly, by thinking to the consequences of an infinitely complete mixing of things, for it is just so that the thinker is wont to walk about in the garden, arrived at his whole-containing part or 'homœomery,' at his cosmic, if not cosmopolitan, individual. To quote from the fragments: "All things were together infinite both in number and in smallness" and "In everything there is [always²] a portion of

¹ This present paper is really third in a series of short studies of the inner logic of the early Greek philosophy. See 'Pluralism: Empedocles and Democritus,' in *The Philosophical Review*, May, 1901, and 'Being, not Being and Becoming,' in *The Monist*, April, 1902.

² If not the immediate context here, at least other sayings, referred to Anaxagoras, notably those describing the separating activity of *νοῦς*, may be cited as my warrant for the insertion of this important word 'always.' Thus:

everything." In short, the homœomery was just such an infinitely small part that it actually *always* contained at least a very wee bit of everything.

But what an amusing paradox! It may be gifted with insight even to the point of being richly philosophical; yet it is also absurd. It had congenial company, however, in its absurdity. That marvelously comprehensive, though absolutely small, portion of Anaxagoras's complete mixture was, emphatically, only the fitting contemporary either, as was hinted, of the citizen of Pericles's Athens, whose patriotic pretenses were seriously complicated and compromised by associations of all kinds with all parts of the known world, or of Zeno's point, which managed without difficulty to swallow the whole of space, and in performing this remarkable feat also turned either the highest speed into perfect rest or perfect rest into the highest speed. The fine arts, too, which Pericles fostered so notably, did but bring to the life of the time a message of the widely and deeply natural through the narrowly human. Did not those arts give the human, as it had been formed and established, to the natural environment? Did they not depend on analogies of the natural to the human? The arts, then, shared in the absurdity and laughter of the time. They turned as readily to comedy as to tragedy. They had, among others, the great Aristophanes, who was certainly not less a genius than Sophocles and who not less effectively—witness his 'Birds' and 'Clouds' and 'Wasps' and 'Frogs'—made the little human just swell with the big natural. So the philosophy of the time was not alone in its entertaining absurdity, nor was it alone in the dangers with which it threatened the traditional life and thought of the Athenians, not to say of the Greeks at large. It pays, too, for us in this present study of Anaxagoras, of the poetry of his metaphysics, even again at the risk of falling into the pit of pragmatism, to have associated the gay cosmopolitanism of the contemporary Athenians, the serious jests of Zeno and the laughter of Aristophanes with Anaxagoras's absurd but deeply significant whole-containing part. Do men always laugh in moments of great tragedy? Are both comedy and tragedy always incident to the passing of a civilization, to the preparation in life for a new dispensation and in thought for a new category?

Still, to dismiss suggestions and questions like the foregoing and wisely to return to that ultimate part, paradox, absurdity and all, of an infinitely complete mixture, so small as to be all-inclusive, it will

"*νοῦς* caused the separating off, and the rare is separated off from the dense, the warm from the cold, the light from the dark, and the dry from the moist; but no thing is altogether separated off nor distinguished from anything else except *νοῦς*."

doubtless be objected, quite emphatically, that, after all, the day is saved for sanity and good order by the simple fact that no series, such as the operation of infinity always determines, ever really has a last term, and that, therefore, the homœomery, like Zeno's small, but very comprehensive, point, is merely the result of somebody's perfervid imagination. That may well be, except for the opprobrium cast at the imagination; for always what is deep must ride rather roughshod over what is commonplace and unimaginative, seeming quite absurd to a prosaic mind and violating the conventional standards of sanity and intelligibility. Quite as truly, in fact, for real logic as for psychology and physiology, the notion of Lombroso that insight is a form of insanity is a sound one. Granted, then, that no infinite series formally and consistently ever really has a last term; nevertheless, if not prosaically, at least poetically, whatever we may find this to mean, the series does have such a term, and Anaxagoras, therefore, not only had a right to his homœomery, but also, as we shall find, himself fully justified that right in his philosophy. Not all rights, I must insist, can be formally logical or prosaically consistent with positive experience. There truly is such a thing as 'poetic justice.'

So the case for Anaxagoras seems to rest on the meaning of the last term of an infinite series and especially on the propriety of a logician and metaphysician ever being in any sense or measure a poet. His resort to the operation of infinity makes just these the central issues. Accordingly, as concisely and as simply as possible, I would make the following suggestions bearing on these two matters, that appear to me to be quite inseparable. Thus, to begin with, how any one can ever seriously expect a formally determinate end to an infinite series or take quite literally, that is, under the narrow tests of mere formal consistency, those who seem to think to such an end, is very hard indeed to understand. Also, to broaden the view somewhat, though it may be to go somewhat beyond the precise limits of anything that Anaxagoras ever said or thought, how any one can expect to construct continuity in the specific terms of any series whatever, or take literally such as imagine continuity so attained *or so attainable*, is also very puzzling.³ Why, the infinity itself just 'by definition' renders a last term, *that is in kind with the other terms*, absolutely out of the question and it makes the series as a whole or the field or sphere of the series, if continuous, then continuous only *sub sua specie*, that is to say, only relatively to its own finite 'base.' The infinity is truly party to a dichotomy, and show-

³ Compare a useful statement, made by Mr. W. B. Pitkin, in an article, 'Continuity and Number,' published in *The Philosophical Review*, November, 1906.

ing as it does, therefore, that the peculiar base of the series is but one among other possible bases, it necessarily opens gaps, or vacua, which only the manifold series of *all* other possible bases can ever fill. The last term, then, which is not and is not even possible, in the sense of its being or being possible, formally in kind with the other terms,⁴ is, nevertheless, very presently real as a negative or indirection for, or say, as a persistent evidence of, the relativity of the assumed base and the existence of all the other bases. Were there a last term formally consistent with those other terms, then reality, only used now as a synonym for perfect continuity, or, say, also for the 'universe of discourse,' would necessarily be made partial instead of whole, as if finally limiting its own unlimited self. Again, the infinity of a series, by denying it a last term in kind or by rendering the sphere of the series inevitably discrete, not indeed to itself, but to reality, means in so many words that there is more in the nature of things, even in the sphere of the particular series itself, in so far as this has any relation to reality, and not only that there is more, but also that there is something different and other, than the particular series, consistently with its peculiar base, can ever adequately present. Moreover, the discreteness, or the vacuum in the case, which nature truly does abhor, is but evidence of the room persistently preserved for that something more and different.

The difference here indicated is important and the character of the vacuum or vacua that it is supposed to occupy is important also. Plainly, it is a disastrous mistake to suppose that infinity can possibly mean only the absolutely more or less of anything or, as the phrase is so often understood, that it can mean only 'difference in degree.' It just does and must point to *other* things. So to speak, darkly and indirectly yet effectively it informs or imbues the thing of the specific series with the necessarily different nature of other things. As an infinite series always means a dichotomy, so does it always harbor a dualism, and not only a dualism, but also—and just here we see the importance of its systematic gradation, its difference in degree—a *working* parallelism. To discuss this last suggestion, however, would take me too far afield. As to the vacuum, then, which, as it were, the infinity provides for the other things, *this clearly must itself share in the difference of the things that occupy it*. The room—I hesitate to say the space—that it makes for these

⁴ Some students of the problem here in question have sought to escape the difficulties by asserting the last term to be possible though never actual. Thus, a line, though never actually infinitely divided, is said to be infinitely divisible. This view, however, while interesting for several reasons, seems to me to be a hopeless evasion of the real issue. The idea of possibility is such a dangerous thing for people to play with. It often hides so many realities.

things can not be formally like the room occupied by the base, or thing, of the particular series. An infinite series, then, always comprises, when judged formally or prosaically, both plena and vacua. Though continuous, or plenal, *sub sua specie*, because of its dichotomy it is not absolutely continuous; relatively to reality it is discrete. But, further, the vacua, which the discreteness creates, are themselves only other plena and, above all, as vacua are never formally like the room or space occupied by the things which they are supposed to lie between. All of which is to say simply that in discussion of the infinite series continuity and discreteness, plenitude and vacuity, can be only relative terms. There are as many *different* continua or vacua—spaces?—as bases, and no single continuum or vacuum can ever be the continuum or the vacuum, or can ever be merely in and by itself so perfect a plenum as to be impenetrable to anything else, or so perfect a vacuum as to offer no resistance.

So construed, infinity, or the operation of infinity, must always mean transcendence of some particular base. It must mean some kind of projection from one plane to another or others, or, better still, translation of one form of reality to another form or other forms of reality. And in view of this projection or translation—or penetration?—only a poetic mind, not a formally consistent, narrowly prosaic one, can possibly grasp its full import. For the prosaic mind there is either continuum or no continuum; vacuum is just vacuum; infinity can be only more or less; and so on. For the prosaic mind the last term, or a continuum, though never actual, is significant only as formally *possible*, whereas the infinity, though not absolutely denying the possibility, indeed though really affirming the reality, does deny the *formal*⁵ possibility. But here, though with direct reference only to the last term, take some very simple, commonplace illustrations. Do parallel lines meet at infinity? Do circles in the same or in parallel planes intersect at infinity? Is there any end to the series 1, 2, 4, 8 ..., etc.? Is the perfect baking-powder label that pictures the labeled tin, possible? To all these questions some would give a negative answer or would perhaps say, "Only theoretically *possible*." Such an answer, however, I must insist, is too prosaic, with the blindness of all prose missing the real point. The parallel lines or parallel circles do meet, not indeed at infinity as only a maximum length or distance, but at infinity as referring to their possessing another character besides that of length, whether straight or curved; they meet, not by their infinite length, but by their parallelism, which is not a matter of their mere length at all. The series 1, 2, 4, 8, 16 ..., etc., has, indeed, no formal end,

⁵ The form in the case being, of course, the particular base.

but its very lack of such an end makes the producing multiplication as real as the terms and implies besides both the possibility of other series, such as 1, 3, 9, 27 ..., etc., or 1, 5, 25, 125 ..., etc., and other possible operations, whether of multiplication, division or what you please. And a labeled baking-tin with its own picture on the label might trouble an over-scrupulous designer, but the appreciative artist, who might also be an interested purchaser, would be quite satisfied with one term in the series, instinctively realizing that the infinity could only mean that labels could not be alone in the world, that something besides labels was necessary to real tins or to real baking-powder. Remember, infinity always calls, not for more nor for less, but for something else. At infinity, in fact, the troublesome label might even be transmuted—such is the strange alchemy of real logic—into the very powder in the tin; certainly it could not remain, except for a very prosaic mind, indeed, just a common label.

And now, very much as infinity defines a parallelism that is independent of mere distance, as it asserts multiplication to be as real as any multiples and more general than any specific series, as it insists that labels can not be empty forms, but must be in the world with other things, including tin and perhaps alum, which are at least as real as they, and in general as it always projects or translates whatever it touches, leading this out of its own confined world into another and different world; so has it, to recall Zeno, actually transmuted the static coexistences of space into motion or the sequences of motion or time into rest or unity, and has, finally, revealed *voids* in the garden of Anaxagoras's homœomeries. Anaxagoras was enough of a poet, not only to see the vacuum, or *vacua*, within and among the ultimate parts of his infinite mixture, but also—and exactly this is his chief merit and justification—to fill this vacuum with what was not physical or at least not similarly physical and with what accordingly served to complete his universe. In general such fillings have frequently been known as *dei ex machina* and have been thought illogical and dogmatic; but most certainly they are not really illogical, though always they must be formally so. They are not illogical for a metaphysics which infinity is constantly challenging to be poetic.

Anaxagoras's whole-containing part was manifestly paradoxical, and it is but a summary of the foregoing to say that the last term of any infinite series must always be paradoxical.⁶ The paradoxical character is one with the formal impossibility, and it gives evidence, too, of entrance into another world or of another world having penetrated this world, that is to say, the world of the particular series.

⁶ Or antinomial?

So to speak, however absurdly or humorously, what is paradoxical already virtually is something other than itself. From his whole-containing part, accordingly, Anaxagoras passed to something different, which only gave explicit form or character to what was already implicit in his cosmic elements, and this new thing he called, as we know, by the name of *νοῦς*. *Νοῦς* supplied the wanting last term of his series, not in the negative, paradoxical and impossible form of the homœomery, but positively, that is, as if incarnated in the form of the other world to which the infinity had transmuted the physical mixture. *Νοῦς* was perfectly homogeneous or unmixed. "And all *νοῦς* is alike, both the greater and the smaller; while nothing else is like anything else, but each single thing is and was most manifestly those things of which it has most in it." Significantly, too, for the interpretation of other early Greek philosophies as well as for that of the philosophy of Anaxagoras, *νοῦς* was assigned characters more or less closely allied to those of Anaximander's 'boundless,' Parmenides's 'being' and even Democritus's 'vacuum.' It possessed, however, in Anaxagoras's view the distinct nature of a force or power, and in this character it again seems directly related to the homœomeries. Thus, while statically and quantitatively these elements are absurdities and so elements only poetically, dynamically and qualitatively they lose the absurdity and become intelligible. A living, active body is made up of what might be called, paradox and all, whole-containing parts, and Anaxagoras himself seems to have had some notion of a world so 'composed,' or so mixed, when he spoke, if he did, of his elements as 'seeds,' that is, as potentialities or as parts with a real relationship as far-reaching as the nature of the whole to which they belonged, for whatever is potential must be mixed, as it were, with all that is beyond itself. Anaxagoras, however, appears to have held too closely to his paradox; he failed to solve it by abandoning the view of a merely composite or a merely mixed world and taking up that of an active organic one. But for his shortcoming in this respect, being a poet he made amends indirectly or by his *deus ex machina*. Though he was not clear that his world of the homœomeries, whole-containing parts as they were, was really active and organic in its own right, he, nevertheless, admitted to his universe, but as if it were a separate thing, a principle of organic activity. *Νοῦς* 'moved all things,' 'had power over all things,' separated or differentiated things, but never sharply or absolutely, always under the constraint of everything retaining a portion of everything. "*Νοῦς* is the thinnest of all things and the purest, and it has knowledge about everything and the greatest strength." So *νοῦς* distinctly had the character of a power, and

whether presented by Anaxagoras in its nature or in its peculiar work it is plainly the conception of an early Greek, a pre-Socratic Greek, envisaged as it seems to be in terms mainly physical, yet it shows the philosopher trying to meet the challenge of infinity and rise to a different view.

And one thing more; one more point in this case for the poetry of Anaxagoras's metaphysics. In a sort of a metaphor, in a very physical image that seems to me wholly natural to a philosopher, early Greek that Anaxagoras was, who tried to throw all his ideas, however extraphysical in intent, into strictly physical forms, *νοῦς* 'ruled the rotation of the world, setting it in rotation in the beginning.' Let any one try to think of the double process of *νοῦς*, at once differentiating and organizing, responsible equally to whole and to parts, to unity and to difference, to rest and to change, as a form of motion, and I am disposed to believe that he would come, as logically as poetically, to the idea of rotation. Still, be this as it may, Anaxagoras's *deus ex machina* was the all-powerful Rotator and the poetry, if not the inner logic of the consciousness of his people, had often found expression in just this imagery.

So, to conclude, in the formally impossible elements or homœomeries, in the sensitiveness to their impossibility as shown through the appreciation of a need for something else or, as was said above, through the recognition of vacua within and among the perfectly mixed whole-containing parts, and in the doctrine of *νοῦς* as meeting the need or as occupying the vacuum, at least in these three different ways, all of them paradoxical, the metaphysics of Anaxagoras was poetic. Now, I have taken no pains to bring out the equally paradoxical nature of *νοῦς* itself, but suffice it to say here that *νοῦς*, though perfectly rare and unmixed, was substantial and real in its own way and was the mixer of all things. Kings can do no wrong, being legally supreme, nor could *νοῦς* be mixed like its different but cosmic subjects. In its three chief factors, then, the elements, whole-containing parts; the realized need or vacuum, itself only another plenum; and *νοῦς*, the unmixed mixer; in these three factors Anaxagoras's metaphysics was paradoxical, and so formally absurd. It was throughout formally absurd, and it was only absurd and inane, unless, as the atmosphere of the time has already suggested to us, such absurdity must always accompany insight. In short, not sober prose, but laughing insight, not formal, puritanic consistency, but even violent paradox, would seem to be the way, albeit the dangerous way, as to real life; so also to true, vital metaphysics; and the name for metaphysics, as such a beast in the garden, to be poetry. Perhaps, if in the spirit of such poetry

we could approach certain problems and doctrines of modern science and philosophy, there would even be much personal profit to all concerned as well as peculiar gain to the movements of certain current thinking in the garden.

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SOME INADEQUACIES OF MODERN THEORIES OF JUDGMENT

FEW would dare to say of any problem to-day that we have touched its bottom, and reached a solution subject to no important additions. The history of thought shows that what is to-day deemed a fairly complete solution is quite likely to be regarded to-morrow as little more than a restatement of the question—very advantageous, no doubt, but by no means the solution we want. Accordingly, I shall try to show that some of our modern theories of judgment, well-established though they are, yet restate rather than solve the main problem of judgment.

By judgment I here mean, not merely a logical affair, nor merely a psychical event, nor a proposition of language, but something with all these aspects. I understand judgment to be a psychical state or process, with a peculiar logical signification, capable of a certain symbolic statement, and at least partially expressible in the idioms of language. To consider one of the aspects only as essential would probably be unjust to our results; at any rate, in approaching the problem to define it, as we must soon do, we should pay regard to the whole concrete situation. For it is generally agreed that no one aspect of a limited subject can be fully understood independently of other aspects.

The argument of this paper will be to state roughly something of the modern way of looking at judgment, to define the main problem of judgment, and to show that the views referred to, though correct enough, leave the most of the problem untouched.

Perhaps the general modern doctrine may be thus stated: in judgment we have an ideal content used to refer to something real. There is, to be sure, much difference of opinion as to the meaning of *real* and of *ideal content*. Some define real in practical terms, others in theoretical; some as transcendent of, others as immanent in, experience; some regard the ideal content as a conceptual entity, some as a psychical compound, some as a simple psychical content, some as an action; but almost all agree that, whatever be the meaning of reality, it is essential in judgment to refer to it, and also that whether the ideal contents are themselves psychical existences or concepts or

what not, they are based upon, or derived from, or somehow connected with, a psychical process or state. In short, all agree that we have a psychical process or state with a logical signification. Mr. Bradley and Mr. Bosanquet speak of ideal contents which are not psychical existences or events in time. This, I take it, refers to the *use* we make of the ideal contents rather than to the contents themselves; we do not in using them dwell on their particularity or existence. Both these thinkers would probably admit an actual psychical process and content—perhaps some confused usage or action, for Mr. Bosanquet compares the psychical contents to signal flags which have a concrete existence,¹ and Mr. Bradley treats the logical idea as *abstracted from* a psychical complex.² Mr. G. E. Moore goes farther, saying that the content of judgment is purely conceptual, not psychical. “The idea used in judgment,” he says, “is not a part of the content of our ideas.”³ It is a concept, and a judgment is ‘a specific connection of concepts.’⁴ Yet he would not deny that there are psychical processes in which these conceptual entities appear to us, for he speaks of ‘the relation into which they enter with the knowing subject’ as a unique relation, beginning or ceasing with a change in the subject; and further, “Its occurrence,” he says, “has, no doubt, its causes and effects.”⁵ Thus, it seems plain, Mr. Moore recognizes a psychical content which, being a point of departure for reaching the concepts, is directly and necessarily connected with judgment, and so from the completest point of view forms a part of the judgment. Other views give the judgment itself a psychological status. Thus, Professor Erdmann regards it as made up of psychical material, though not merely a combination of ideas or names, but referring to objective things.⁶ The subject-predicate relation means belief.⁷ Brentano gives a psychical content to judgment, together with the irreducible state of acceptance or rejection⁸ (which might fairly be translated as, consenting or refusing to refer to the real). Sigwart’s doctrine of the necessity of the connection between two ideas is another way of defining the reference to reality of a psychical combination. The pragmatic view differs from a view like Mr. Bradley’s chiefly in two points. First, it defines reality and ideal content in practical terms. Instead of the term *reality* it speaks of *stimulus* or *environment*, and instead of the term *referring an ideal*

¹ ‘Logic,’ Vol. I., p. 74.

² ‘Principles of Logic,’ Ch. I., *passim*.

³ *Mind*, 1899, p. 177.

⁴ *Ibid.*, p. 179.

⁵ *Ibid.*, *loc. cit.*

⁶ ‘Logic,’ Vol. I., p. 243.

⁷ *Ibid.*, p. 290.

⁸ ‘Psychologie,’ p. 262.

content to reality it speaks of *tentative action upon the environment*. And secondly, it attempts to abolish the gulf between reality and our experience by defining reality in terms of the latter. This last is foreign to our present problem: the first shows, I think, a substantial agreement with the general modern position, except that the whole matter is stated in terms of action and immediate experience.

The views just mentioned, then, agree in this: there is a psychical process or content which is used for the purely logical signification of suggesting reality. Whether it is, with Erdmann, Sigwart and others, the psychical content itself which is so used; or with Bradley and Bosanquet, an abstracted part of it; or with Moore, a pure concept somehow attached to it; or an attempted action upon a part of our experience-content;—there is a general agreement that we entertain some psychical material, and use it, whether as it is or as transformed into a concept, to point to the real. This view I shall call the orthodox view, and it is its inadequacy, first of all, which I shall try to set forth. To do this, let us define the problem of judgment.

We have seen that judgment may be viewed in four aspects: it is or uses a psychical process or content; it has a certain logical meaning; it is expressible by a set of symbolic relations; and finally, also by grammatical categories and idioms.

Now let us see the meaning of these four aspects. The logical aspect reveals the use to which the judgment-content is put. The psychological aspect is that content (be it quiet ideas or active motions) which is used. The symbolic aspect reveals the make-up and structure of the judgment, not as a psychical content, but as a conceptual affair, an ideal or structurally perfect content, which the psychical content is meant to suggest or imply. The linguistic aspect reveals, perhaps by a rough correspondence, the psychical content above mentioned. Many authors doubt this, however, on account of the great variety of linguistic forms, but its falsity does not injure my argument here, so for completeness' sake I assume its truth. Now we have seen that the logical aspect of judgment is concerned with the use to which the judgment is put: this is its functional side. It is equally clear that the other three aspects are concerned with the content and make-up of the judgment: the psychological and linguistic with the make-up of the content actually in the mind as psychical existence; and the symbolic with the make-up of the judgment itself as a finished logical product, which may very well not be psychical content at all, but is an ideal structure, meant or implied. Now if the logical aspect of the judgment states its function, and the other three its structure whether as ideal or as actually entertained, is it not evident that there must be a correspondence

between the logical and the other three? For the structure must fit the function. It is a general principle in all the sciences which deal with life and consciousness that structure and function go hand in hand. An organ becomes adapted to its uses, and the machines we make must be adapted in structure to their purpose. So, too, of judgment: if the psychical content—the combined ideas, the tentative reactions—are put to a very different use from that of the psychical contents of mere images (which we undoubtedly *sometimes* have) or of emotions or any other states, will not this content gradually assume the structure best fitted to that use? If this were not so, it would be a most unique exception to the general laws of psychic life, where use determines content, and is determined by content. The same reasoning applies to the symbolic or conceptual make-up of judgment. If a symbolic group *aeb* is the conceptual expression of some judgment, while another symbolic group, say, *ab*, of slightly different structure, is simply a case of logical multiplication, by virtue of what is the former structure adapted to express a reference to reality which the latter does not imply? And, again, on the linguistic side: if that combination of words called a sentence or proposition denotes an assertion about the real, while, as a rule, other combinations of words do not convey such an assertion, what peculiarity enables a sentence to be used thus? And so it seems fair to say that the nature of judgment is not completely understood until we know, not only what function it performs, and what structure it has, but how the structure reveals its function. For only thus is that structure understood; otherwise it is merely described. It is not enough to know that judgments are used to point to reality, and that their structure is that of subject and predicate. Why should they have such a structure? This is not understood until we have shown how this structure is by its very nature adapted to suggest reality. Professor Erdmann has said that ‘the subject-predicate relation implies belief’—*i. e.*, the very structure of judgment implies a reference to reality. But how does it? Why should it? What is it about the meaning of that relation which enables it to suggest reality?

As perhaps this way of defining the problem employs phrases unusual in this situation, I will try to elucidate my meaning further by showing how I think the problem might be solved. Suppose a study of the psychical content revealed a certain structure, say, *ArB*, and suppose we found that structure to be peculiar to all judgments. Suppose, also, this actual structure were found to correspond point for point with the symbolic structure, as ascertained by symbolic logic, and suppose the linguistic evidence also pointed in the same direction. And now suppose, finally, that we found that the

structure thus discovered in all judgment-contents means just about the same thing as what *real* means to common sense. For example, *real* might mean to common sense *effective*, making an endless amount of difference. Now suppose the structure we symbolize by ArB meant, when put into non-technical language, something-making-a-difference-to-something-else. Then ArB would be excellently adapted to suggest reality to the ordinary man, and would be the structure best fitted to survive in the long run, in the make-up of judgment. Of course I do not mean that it would suggest reality to a mind which had otherwise no inkling of it. We are not generating the idea of reality, either logically or psychologically, but only trying to ascertain what kind of a structure would be in the long run best adapted to suggest it to a mind that already had a good working notion of it. You can perhaps never *derive* the reference to reality from any combination of ideas, of whatever structure. We have learned that much from the criticisms of Mr. Bradley and others upon the old associational theory of judgment. But you *can* suggest the idea of reality to a mind that has already formed such an idea, and can suggest it better by one structure than by another. Of course by the idea of reality I do not here mean a consciously elaborated metaphysical definition, but an every-day working notion of the distinction between fact and fancy—such as men very early find it useful to obtain.

Doubtless the problem may turn out insoluble. No constant structure may be found in the psychical content of judgment. Or if it is so found, it may have nothing to do with any common-sense idea of reality. But whether soluble or not, this is the main problem of judgment, and we seem, on general analogies, to have good reason to expect an adaptation between psychical structure, symbolic structure and even linguistic structure, on the one hand, and logical function on the other.

What seems to me most likely to prevent the above definition of the problem from being accepted is the opinion that judgment is often too simple an affair to be separable into the two sides of structure and function. Many doubtless think that a simple perception is a judgment. Brentano's view, also, is an example of the above opinion. We do not, it would be said, take up always a complex content and use it as an instrument to suggest that we are referring to reality, as we should take up a shovel to use for digging. This view might be answered empirically by a study of the content of judgments, which content, as Sigwart, Wundt, Erdmann, Paul and many others have shown, is always complex. But even if these results had not been reached, and it were true that we sometimes entertain a perfectly simple content and just believe in it, I should

say that these are not the class of cases we are studying. It is merely a question of terminology, after all, whether we call these simple perceptions judgments or not. Perhaps we should better call them only perceptions, while recognizing that they resemble judgments in many important respects. At any rate, even if we did call them judgments, they would be special limiting cases, in which the real itself is so directly present that our psychical content needs no peculiar structure to suggest that it is referring to reality. The fact of these special cases no more annuls our general statement of the problem than does the fact of a point being a special case of a conic section annul the general definition of the latter as a curved line.

Now as regards the problem of correlating structure with function, the orthodox theory has relatively little to say. It has, in the main, contented itself with stating the function of judgments, their logical aspect only. Many of its votaries have theories of structure, to be sure, as also have logicians who do not hold the orthodox theory. For example, we have the reality-idea theory, the individual-universal theory, the partition-theory, and others. These, however, must be judged by the one test: do they show us how the structure is adapted to the function? I do not think this problem has been consciously and systematically attacked. Thus, Mr. Bradley's theory that the subject is reality and the predicate an (universal) idea or concept leaves open the question, How does that part of the content which corresponds to the subject show in its make-up that it has objective reference? To make the idea of reality part of the judgment-content only shoves the problem farther back, for what is there about that idea that adapts it to the function of suggesting reality? The same objection applies to Mr. Bosanquet's position when he assigns to the verb a demonstrative reference, a pointing toward reality, and finds in the verb the peculiar nerve of judgment.⁹ By virtue of what in its meaning may the verb, above other grammatical categories, be so used? So, too, we must ask the pragmatic theory, How does the attempted reaction show by its very make-up that it is directed upon the real environment, rather than not so directed, like a fancy?

Now I am not disagreeing here with any special structural theory, nor with the orthodox theory in any of its forms, theoretical, pragmatic, psychological, conceptual or what not. It seems to me that every theory has a necessity and a usefulness in it. As for the orthodox theory, it has performed two indispensable services. It has shown that the mere combination of ideas can not of itself generate the idea of reality, and it has established beyond all doubt the differentia of judgment on its functional side. But this is now insuffi-

⁹ 'Logic,' Vol. I., p. 84.

cient, and the orthodox theory, in common with the others mentioned above, must be considered too abstract. For they either study but one side of the problem or, studying both, fail to show their interdependence and mutual adaptation. The judgment as it exists and is used in human experience is what gave us our whole problem. This judgment has two mutually conditioning sides, function and structure; and the problem is not adequately conceived till we study both sides *as* conditioning each other.

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CURRENT MISCONCEPTIONS OF REALISM

THE realistic theory of knowledge has for many years been regarded by professional philosophers as so nearly obsolete as hardly to merit refutation. The rationalistic idealists, following Kant and Hegel, have peacefully debated with the empirical idealists, following Berkeley and Hume, as to whether *esse* was predominantly a matter of *concipi* or of *percipi*, each school paying to the other the implied compliment of treating its doctrine as the only alternative to its own. Quite recently, however, this good-humored rivalry has been disturbed, not only by a vigorous revival of realism on the part of Mr. G. E. Moore and Mr. Bertrand Russell, in England, but also and more noticeably by the coming of the pragmatists. It seems to be a matter of some difficulty to define the principles of this new school in a manner acceptable alike to its adherents and its critics. But perhaps it is safe to say that pragmatism, whatever else it may imply, stands for a protest against interpreting experience in terms that are exclusively cognitive. Existence does not consist primarily either in being perceived or in being conceived, but rather in being felt and willed. *Esse est sentire* and *esse est volutum esse* might serve as mottoes to express the pragmatist's protest against the Berkeleyan and Kantian neglect of the non-cognitive factors of experience.

Now one of the tangible results of the many polemics between this new school and the school of absolute idealism has been a reopening of the supposedly dead issue of natural realism. The pragmatists have been accused by the absolutists of maintaining a too extreme form of subjectivism, and of regarding truth itself as merely the satisfaction of a certain kind of human need. To this charge of subjectivism the pragmatists have made two replies: First, that in identifying logical truth with the psychological and biological processes by which it is pursued and attained, they have checked rather than extended the subjectivism

that has characterized modern philosophy. Cognition or awareness of objects is no condition of their existence, but is rather itself a phenomenon conditioned by the non-cognitive processes of desire and emotion. We can not say that the existence of an emotion consists merely in its being known when cognition itself is shown to depend upon the existence of emotions and needs. Thus in so far as idealism means a reduction of reality to the cognitive activity of a subject, the pragmatist may claim to be anti-idealistic, or realistic. But a second reply that the pragmatist makes to the charge of subjectivism is to bring a counter-accusation against absolutism, of siding with natural realism in so far as it maintains the dualistic belief in an unalterable system of objective truths that subsist independently of the flux of human experience, and that stand in a relation of external correspondence to the judgments made about them in that experience. Thus it is that realism, as a kind of side issue in the debates on pragmatism, has come up for discussion; and as preparatory to such discussion, it seems worth while to protest against certain time-worn misconceptions and caricatures of the realistic theory which it has been the custom of idealists to employ in their perfunctory refutations of that doctrine.

Of these misconceptions I have chosen the three which seem to be most usually held. It is charged, first, that realism is identical with psychophysical dualism or epiphenomenalism, which is the doctrine that consciousness is incapable of producing effects in the world of objects; secondly, that it is identical with metaphysical dualism or the belief that real objects are things in themselves entirely transcending our knowledge and possessing none of the qualities which we attribute to them. The third misconception is the identification of realism with epistemological dualism or the representative theory of knowledge, according to which we can have direct knowledge only of our own ideas, which, as phenomena, are numerically distinct from the real objects which can merely be inferred to exist behind them. Now these three types of dualism are doctrines which individual realists have sometimes held, although no one of them, as I propose to show, is implied by realism as such. Realism in its primary meaning is, I think, generally conceded, both by its defenders and by its opponents, to be the view that things do not depend for their existence upon the fact that we know them, and that consequently they can continue in what is called *existence* during those intervals of time in which no subject is aware of them. It is opposed to idealism only in so far as idealism involves the doctrine of *no object without a subject*. It regards consciousness not as a creator, or sustainer, or even as a necessary correlate of its objects, but rather

as analogous to the light of a candle, which during its brief and intermittent periods of existence illumines the objects over which it plays, thus enabling the owner of the candle to adjust himself more effectually to those objects.

Accepting this as the definition of realism, we have first to inquire into the process of reasoning by which the idealist so often imputes to the realist a belief in psychophysical dualism or the epiphenomenality of consciousness. That reasoning would seem to be somewhat as follows: If the realist is right in thinking that an object is not *directly dependent* upon the fact that it is known, it can not be *indirectly affected* by that fact. For if existence does not depend upon knowledge, knowledge and existence must be sundered from one another by an impassable chasm, and consciousness will thus be forever incapable of effecting any changes in the real world—will be, in short, an epiphenomenon. The briefest answer to the above is to point out that because an object is not dependent directly and at present upon a certain thing, it does not follow that it can not be changed indirectly and in the future by that thing. The absence of direct dependence at one moment does not preclude indirect dependence manifesting itself at another moment. Thus the target does not depend for its existence upon the bullet while the bullet is speeding towards it, but that does not prevent the bullet from changing or, if you like, destroying its existence later on. When changes in an object ensue from a cognition of it, it is usual to suppose that the cognition excites motor currents which affect the muscles and ultimately affect the object that was cognized. What possible reason is there for supposing that realism in virtue of its denial that *esse* is *percipi* must also deny to consciousness the power to affect in this indirect way the objects that are known? And yet if the reader should doubt that any idealist ever has held this misconception, I need only remind him of Professor Royce's well-known criticism of realism, as given in 'The World and the Individual,'¹ and of a recent article by Professor Leighton, in this JOURNAL,² in which he says "realism in *metaphysics* means that the real is wholly external to and independent of thought. . . . In such case cognitive consciousness must be an unaccountable by-product of the cosmic machinery."

I pass now to the second misconception of realism, according to which the realist is supposed to be bound in consistency to believe in metaphysical dualism or in things in themselves, lacking all the qualities possessed by the things of which we are conscious. The

¹ Vol. I., lecture III.

² Vol. III., p. 13.

root of this misconception is to be found in a passage in Berkeley's 'Principles of Knowledge,' in which we are told that the only things that can resemble ideas are ideas, and that if external objects exist independently of our ideas they must of necessity be without color, sound, solidity and extension because these qualities are all ideas or objects that are known. The realistic belief in things numerically outside of consciousness is supposed to imply a belief in things that are, as it were, qualitatively outside consciousness or beyond the scope of thought. Now just as we sometimes find realists who are also epiphenomenalists, so we sometimes find realists who are also agnostics, but it is hard to see how realism as such implies the latter any more than the former of these views. Why should I believe that an object, when I do not perceive it, should exist in any other way than when I do perceive it? There is no reason at all except the axiom of idealism itself to the effect that consciousness is a necessary condition of the forms and qualities as well as of the existence of its objects. This may, of course, be true, but it is at any rate what the realist explicitly denies, for he sees no absurdity in believing that objects do not change their nature when they pass in and out of consciousness. Perhaps, after all, when the idealist attributes to the realist a belief in things that transcend the things of sense, he only means to be very fair and to put the view which he opposes in the least unfavorable light; for from the idealistic standpoint it would be one degree less absurd to believe in the transsubjective existence of unknowables than of knowables. I am inclined to think, however, that the chief source of this misconception lies in the loose use of the word *experience*. This word is a complex term meaning consciousness-of-something. The idealist, however, is prone, on occasion, to forget its complexity and to use the word improperly to denote simply the objects of which we are conscious. Thus when the realist (interpreting the word *experience* in its true sense as the being-conscious-of-objects) denies that reality is confined to experience, the idealist accuses him of introducing mysterious and transcendent entities, and points with pride to the fact that *his* philosophy explains the world without appealing to anything not presented in experience. But to deny that the world is reducible to sensible objects in the relation of consciousness does not imply that the world is not reducible to sensible objects. When we deny that all *A* is *BC*, we do not thereby deny that *A* is *B*.

This second misconception of the realistic position is, like the first, so obvious when once pointed out that to discuss it is to elaborate a truism, and yet, as Mr. G. E. Moore has well shown in his article on 'The Refutation of Idealism,'³ the chief ground for the

³ *Mind*, N. S., No. 53.

idealist's doctrine, and for the peculiar and irritating complacency with which he holds it, is to be found in the axiomatic character which he supposes it to possess on account of the very misconception of which we have been speaking. He feels, that is to say, that because the only objects that we know are the objects which we experience, it must follow as an equally analytic or truistic proposition that the only objects which we know are our experiences. Once let him recognize that experience is not the name for knowable objects simply, but rather for knowable objects only while they are standing in the knowledge relation (*i. e.*, the relation of being apprehended by a subject), which is only one of the many types of relation open to them, and the chance is even that he will admit to the realist that there is at least a possibility of those same objects existing during the intervals when they are *not* standing in that particular relation.

Passing now to the third of these current misconceptions of realism, we find at once considerably more excuse for its existence than for the two already considered. For as almost all of the realists in modern philosophy have happened also to hold the doctrine of epistemological dualism, it is not unnatural that the modern idealist should have confused realism as such with the dualistic or representative theory of knowledge. According to epistemological dualism the only objects that I can certainly know are the modifications of my own mind. Knowledge is true or false according as these subjective objects are good or bad copies of the real external objects which we must infer as their causes. This Cartesian and Lockean dualism seems at first sight quite easy to refute by pointing out (1) that if we could know only ideas or copies of things, we could never know that they were copies, and certainly not whether they were good or bad; and (2) that a real world which never could under any circumstances be perceived is not *the* real world. We are not, however, concerned here with the validity either of dualism itself or of these traditional refutations of it. As a matter of fact, whether self-contradictory or not, the representative theory of perception keeps coming back to plague us in one form or another, perhaps because of its seeming usefulness in psychology and its seeming inevitableness in physics. At any rate, idealism, especially in its later or transcendental forms, has been glad to be allowed a monopoly of the monistic or presentative view of knowledge. For while realism is not of necessity dualistic, idealism is necessarily monistic. All will admit that we can know our own ideas directly or presentatively, and if we hold that the only objects that exist are our own ideas, why, then, the only objects that exist can be known directly and without the treacherous mediation of copies.

Despite all this, it is not difficult to show that idealism has no

necessary monopoly of the monistic epistemology. Common sense, for example, holds that we know directly the very stars and stones themselves, and not mere ideas of them, and it holds that the very same stars and stones that we know do persist unchanged through the hours when we know them not. And could we but solve or postpone the baffling problem of the material mechanism which enables us, in the acts of perception and thought, invisibly to reproject into the transsubjective sphere the objective *quales* previously projected thence upon our sense organs as visible or measurable energy modes, it would be as easy and natural to believe that our sight extended through external space and grasped the real stars as that our hands extend through external space and grasp the real chairs and tables.

Presentative or monistic realism, which might be named 'pan-objectivism' to distinguish it both from dualism and from thoroughgoing idealism or pan-subjectivism, is, in short, by no means self-contradictory, though it is in modern philosophy much less frequently defended, and much more difficult to defend, than the dualistic form of realism. The idealist should not, then, regard a refutation of dualism as equivalent to a refutation of realism. If all of the three dualisms which we have been discussing, viz., psychophysical, metaphysical and epistemological, were abandoned, it would still be possible to hold with the realist that the objects known are not dependent for their existence on the knower, and that consciousness, during the brief moments of its life, expands so as to encircle the things distant in space and time, rather than that the latter contract into mere ideas or states of mind. To say with the idealist that the universe that is known is as small as the knower, is not the same as to say with the monistic realist that the knower can become, while he knows, as large as the universe which he knows. In the one case we insult the universe by reducing it to the dependent status of our own feelings, in the other we console ourselves for the temporary and intermittent nature of our consciousness by the thought that while it lasts it can take us out beyond ourselves into the realm of things that endure.

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DISCUSSION

A REPLY TO MR. PITKIN

MR. PITKIN'S 'reply' to me, on page 44 of the present volume, perplexes me by the obscurity of style which I find in almost all our younger philosophers. He asks me, however, two direct questions which I understand, so I take the liberty of answering.

First he asks: Do not experience and science show 'that countless

things are¹ experienced as that which they are not or are only partially.' I reply: Yes, assuredly, as, for example, 'things' distorted by refractive media, 'molecules,' or whatever else is taken to be more ultimately real than the immediate content of the perceptive moment.

Secondly: "If experience is self-supporting (in *any* intelligible sense) does this fact preclude the possibility of (a) something not experienced and (b) action of experience upon a noumenon?"

My reply is: Assuredly not the possibility of either—how could it? Yet in my opinion we should be wise not to *consider* any thing or action of that nature, and to restrict our universe of philosophic discourse to what is experienced or, at least, experiencable.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Philosophy of Goethe's Faust. THOMAS DAVIDSON. Edited by Charles M. Bakewell. Boston: Ginn & Co. 1906. Pp. iv + 158.

As the editor's preface informs us, this small volume contains six lectures delivered by the late Mr. Davidson in 1896. They are intended 'to lay bare the philosophical and ethical skeleton' of Goethe's 'Faust.' This is done in a running commentary, which tells the story in outline, and intersperses observations on the moral of various passages and on the view of life presented in the whole poem. "'Faust' has an obvious content"—the "emancipation of the individual from institutionalism" (p. 3). "After many abortive attempts . . . the long-suppressed Germanic spirit broke the chains which bound it, asserting itself in its true character. 'Faust' is the drama of this movement; of the escape of the German from the controlling influences of Judea, Greece and Rome" (p. 5). "This movement has two fairly well-defined sides, . . . both essentially Germanic, for the individualistic element in Italy is all Germanic. . . . The Teuton seeks intellectual, the Italian moral freedom. . . . Inasmuch, then, as the Germanic movement includes these two sides, they are both taken account of by Goethe in his poem. 'Faust' is the embodiment of the tendency as a whole" (p. 52).

Goethe's 'aim in the whole work is to show the process by which the individual rises to autonomy.' "When Faust started out and made the pact with Mephistopheles, his notion was, through sensational, boisterous experience, to widen his self out to the limit of humanity's self. Now [in the second part] his purpose is 'to struggle ever onward to the highest existence.' This is a very great change, a change from quantity to quality. Faust has learned . . . that the sum of humanity is a very different thing from the highest existence, which may often be best reached by avoiding a very large amount of experience" (p. 73).

¹ Mr. Pitkin inserts the clause: 'by reason of the very nature of experience itself.' Not understanding just what reason is meant, I do not include this clause in my answer.

The book is too slight to deal thoroughly with 'Faust' or its philosophy, and many a reader will be more interested in what Mr. Davidson betrays of his own opinions than in what he says about Goethe's. Although he writes with great enthusiasm and with a sense of entire sympathy with his author, he gives at the end (p. 153) a somewhat surprising judgment on the moral insight of the poet. "The problem of 'Faust' is not the universal one which meets every loyal soul at the present day: How, having broken away from the traditional, institutional ideal of life, shall a man come into real, saving contact with the reality of life? but, How shall a man do this who makes a pact with Mephistopheles, that is, who seeks self-satisfaction without reference to any one but himself? Of course, the first lesson that such a man has to learn is that no satisfaction at all can be found on any such condition. . . . At the very last moment, Faust learns that his entire life has been a mistake. . . . And what is the truth of which he obtains a glimpse? This, that satisfaction is to be found only in devotion to the ends of human freedom and culture. . . . Faust dies believing that he will find satisfaction in something which he never has had an opportunity of trying. That was not the first time he had so believed. . . . Faust is not saved by his life-long efforts, nor even by his final vision of truth, but by the loving angels. . . . I am therefore distinctly of opinion that, taken as a whole and regarded as the working out of a great moral problem, 'Faust' is a distinct failure" (p. 155).

There are other indications that Mr. Davidson, if he did not fail altogether to catch Goethe's spirit, had a very partial relish for it. He is himself all zeal, all inner tension and watchfulness for saving truths. He hates the poet's loiterings and playfulness; he misses the pantheist's large tolerance and naturalism; he misses also, at the end, the vision of things *sub specie aeternitatis*. He wants an empirical immortality, and is troubled lest Goethe should be thought indifferent to it. And he says: "There is perhaps not in all literature a more splendid piece of self-deception and involuntary hypocrisy than Faust's answer to Gretchen's 'Do you believe in God?' . . . He proceeds with a gush of meaningless romantic words, so dexterously calculated to strike the vague, unmoral, romantic sense, that wiser people than Gretchen—indeed, I find, nearly all readers of 'Faust,' including some of the editors—have been taken in by it and suppose it to be really Goethe's conception of God. . . . Poor Gretchen! She accepts such rubbish and thinks it is pretty much the same thing as what the priest says, only in 'words a little different.' And the sad thing is, she is not so very far wrong; her priest has no true conception of God . . . a mere vague feeling, instead of a clear, definite consciousness of relation to an all-holy personality" (p. 55). This personality, as we learn in another place, is our own. "Unless the universe is organized in each one of us we can not as individuals be universal, and therefore can not be eternal. *Aut deus aut nullus*—that is the alternative" (p. 157).

This 'true conception of God' is perhaps not very remote from

Goethe's; in any case it is the one maintained esoterically by the metaphysicians of his time and country. We may take it on Mr. Davidson's authority that it is not at all vague, romantic or unmoral. If Faust's career does not embody it more clearly, that is perhaps because Goethe was more interested in painting experience as he had found it than in prophesying how experience was bound to move through all eternity.

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Die Religion Friedrich Schlegels. Ein Beitrag zur Geschichte der Romantik. WALTHER GLAWE. Berlin: Trowitzsch und Sohn. 1906. Pp. viii + 111.

This is a very badly written book, partly, no doubt, because on this particular subject it would be very difficult to write a good one. The author's excuse for his undertaking is that although other phases of Schlegel's activity have been abundantly described, there has been hitherto no thoroughgoing account of his religious opinions. It is, perhaps, no fault of the author that he has been unable to give a coherent account of something that had no coherency in it. Still, Friedrich Schlegel was an extraordinarily picturesque character, and although there may have been little continuity in his 'philosophy,' there was continuity of temperament. A different method, guided by a psychological interest, might have produced a readable and a useful book.

The author divides Schlegel's career into three periods: (1) an esthetic and moralizing syncretism (1794-1800), (2) a mystical idealism (1800-1808), which was a transition to (3) a mystical positivism (1808-1829). In the first period, and more or less in the later ones, Schlegel's religious attitude seems sufficiently well expressed in Faust's confession of faith to Gretchen, 'Gefühl ist alles,' Gefühl, to be sure, well seasoned with esthetic enthusiasm. Religion is the purest outcome and the fairest reward of moral living. It is not a means and a prop to morality, as Kant would have it. Schlegel characterizes Catholicism and Protestantism, respectively, as 'naïve' and 'sentimental' Christianity (evidently following Schiller). He considers that the Madonna is entitled equally with Christ to an *a priori* deduction. The period closes with the publication of the 'Ideen,' in which Schlegel believed he had surpassed the 'Reden' of Schleiermacher.

In Schlegel's second period, which opens with the lectures that he delivered for a year at the University of Jena, a new element is the emphasis on the faith in a revelation, accompanied by an increasing inclination toward Catholicism, to which confession he formally attached himself in 1808. It is not surprising, therefore, that Schlegel shows an increasing tendency to identify religion with the Christian faith, and to state this in terms of the Roman Catholic dogma. The distinction between philosophy and religion is more and more emphasized. Philosophy is now inspired by the longing for emotional enthusiasm, while religion begins with a divine revelation of a sufficiently orthodox type. Fantastic interpretations of the Trinity are a matter of course.

In the third period religion based upon dogmatic theology takes an increasing precedence, and reminiscences of the Jena idealism are less obvious. Of course, there is much that is picturesque and imaginative.

Dr. Glawe has evidently done a laborious piece of work, and it is a pity that his book is not more useful. If instead of trying to treat Schlegel as a serious philosopher, he had described him as a symptom, he might have given us a really good book. For just as the study of mental pathology throws light upon the psychology of normal experience, so might the study of an exaggerated type like Friedrich Schlegel bring out clearly the real motives and driving forces behind the metaphysics of contemporary idealism.

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Le mécanisme des émotions. PAUL SOLLIER. Paris: Alcan. 1905. Pp. 303.

In this book Sollier attempts to construct a physio-mechanical theory of emotion, whence the title 'mécanisme.' The hypotheses underlying the idea, although not so concisely expressed, are (1) that all physiological processes are physical and chemical activities and (2) that mental states are the concomitants or the equivalents of certain molar and molecular changes in the nervous system. According to the matter in hand the author is monist or dualist, parallelist or interactionist, and this rapidly shifting and often undeterminable point of view is one of the greatest faults of the work. Mental states are reducible to physico-chemical laws; emotion is the discharge of energy in the brain, but also the feeling of the state of the brain; psychical functions are physiological functions, but there is simultaneity, not subordination, of psychological and physiological phenomena; the state of the cerebrum may be modified by psychological means, but not so readily as by physical and physiological methods; moreover, emotion is the source (cause?) of a great number of pathological states.

The author directs his criticisms against the current James-Lange theory of the emotions, which he calls a peripheral theory, and in opposition to this he devises his central theory of the emotion. The experiments upon which he bases his theory and which he uses as the basis of his criticism of the so-called peripheral theory are those which he has previously reported—in the *Revue Philosophique* about ten years ago—in support of the James-Lange theory. The conclusions to be drawn from these results do not seem to be exclusively those which the author has drawn in his book, and to the reviewer it seems as if these facts could be turned to support the James-Lange theory almost as well as the one which Sollier advocates. It is to be regretted that the author did not continue these experiments and extend them so as to make the conclusions more self-evident.

On the whole the book is stimulating, but rather disappointing. The argument does not always proceed logically, and some of the discussions

are ineffectual. If the author is right, and of this the reviewer has doubts, in concluding that the cerebrum exclusively is concerned in emotional conditions, and that the sense-organs or muscles play no part, the theory is a distinct advance over the so-called peripheral theory propounded independently by James and Lange.

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JOURNALS AND NEW BOOKS

RIVISTA FILOSOFICA. September-October, 1906. *Gli albori della Psicologia in Grecia* (pp. 410-459): A. FAGGI. - The earliest philosophic concepts of the Greeks were animistic. The pre-Socratics were not indifferent to psychology, but for them the soul was a part of nature. Animism persists in both Anaxagoras and Democritus. *S. Bernardo e gli ultimi canti del Paradiso* (pp. 460-474): G. ZUCCANTE. - After the death of St. Bernard the fervent veneration offered to him rapidly created a mystical tradition which profoundly impressed Dante. Hence the rôle of Bernard in the final cantos, where he replaces Beatrice as guide in the presence of the vision of God. To be continued. *Il Moralismo di Kant* (pp. 475-509): G. VIDARI. - A discussion of Kant's ethics with reference to two recent works, 'La philosophie pratique de Kant,' by V. Delbos, and 'Le moralisme de Kant et l'amoralisme contemporain,' by A. Fouillée. Kant's ethical theory was determined by two factors, the rigid and pietistic moral habit and his own critical point of view. These two factors influenced each other reciprocally (Delbos). Consistent with this is the view that the *moralisme* depends upon the absence of 'criticism' (Fouillée). Kant aimed to make ethics independent of metaphysics. But the principles at the basis of morality presume cognition by a form of knowledge that must be called metaphysical. *La fase attuale della psicologia sperimentale ed il congresso di Würzburg* (pp. 510-541): GUIDO DELLA VALLE. - The congress revealed more clearly than the one at Rome the present tendencies of psychology. Fechnerism is gone. Confidence in purely experimental methods is less pronounced. Psychic atomism is replaced by psychic continuity. Introspection is emphasized. 'Differential' psychology has arisen. Studies of the empirical genesis of perception of space and time were wholly absent. The article can not, however, be summarized. *Rassegna Bibliografica. Notizie E Pubblicazioni.*

Congress of Arts and Science, Universal Exposition, St. Louis, 1904.

Edited by HOWARD J. ROGERS, A.M., LL.D., Director of Congresses.
Vol. VII. *Economics, Politics, Jurisprudence, Social Science.* Boston and New York: Houghton, Mifflin & Co. 1906. Pp. xi + 868. \$2.50 net.

Baruzi, Jean. *Leibniz et l'organisation religieuse de la terre.* Paris: F. Alcan. 1907. Pp. 524. 10 fr.

Delvaille, Jules. *La vie sociale et l'éducation.* Paris: F. Alcan. 1907. Pp. viii + 199. 3 fr. 75.

- Düringer, Adelbert. *Nietzsches Philosophie vom Standpunkte des modernen Rechts*. Leipzig: Veits & Co. 1906. Pp. 133. 2 M.
- Gautier, Paul. *Le sens de l'art, sa nature, son rôle, sa valeur*. Paris: Hachette & Cie. 1907. Pp. xxxii + 269. 3 fr. 50.
- Moses, Josiah. *Pathological Aspects of Religions*. American Journal of Religions, Psychology and Education, Monograph Supplement, Vol. I. Worcester: Clark University Press. 1906. Pp. v + 264. \$1.50.
- Thomas, William I. *Sex and Society*. Studies in the social psychology of sex. Chicago: The University of Chicago Press; London: T. Fisher Unwin. 1907. Pp. vi + 325. \$1.50 net.

NOTES AND NEWS

THE *Catholic University Bulletin* for October, 1906, contains a suggestive and well-written article by Mr. Lester B. Donahue on 'The Ethics of Gambling.' He points out that conjoint skill and chance, with risk of profit and loss, is an important factor of social life, affecting the farmer and manufacturer as well as the gambler. The difference is found to lie in the fact that the risk of money and property in the case of business is conjoined with a skill which attempts to eliminate or control the element of uncertainty and to 'evolve from the page of chance' an increment of objective or social gain, while no factor of social profit emerges from the skill and money which the gambler puts against chance. The gambler is in, but not of, the social group. The civil law is in virtual accord with this criterion, since it sanctions certain 'wagering contracts,' such as insurance and speculation in futures, but presumably upon the theory that such wagers react in effect to lessen the total social ills incident upon the operation of chance. The writer gives an interesting summary of the moral law (of the Roman Catholic Church) as to gambling, from which it appears that it is not absolutely condemned, but must conform to five stated conditions which are admirable in their common sense. Mr. Donahue promises a further article on the earlier history of the growth of condemnation of gambling, pages which should add an interesting chapter to the history of morals.

THE Royal Swedish Academy of Sciences will publish early in the present year the first three volumes of Swedenborg's scientific works, edited from the original manuscripts in the library of the Royal Academy in Stockholm, by a committee of the Royal Academy, assisted by Alfred H. Stroh, of the Swedenborg Scientific Association of America. The first three volumes will be: Vol. I. 'Geology'—Introduction by A. G. Nathorst; Vol. II. 'Chemistry, Physics, Mechanics'—Introduction by Svante Arrhenius; Vol. III. 'Cosmology'—Introduction by Svante Arrhenius. These volumes will be followed by others on anatomy, with introductions by Gustav Retzius. The volumes are in Latin, with the introduction in English. They are the result of the most notable efforts to put in the

hands of the scientific world the earlier writings of Swedenborg. A new and revised edition of his 'Principia Rerum Naturalium' in English, long out of print, is now going through the press in England, under the auspices of the Swedenborg Society of London.

WE learn from *Nature* that *La Rivista di Scienza* is the title of a new Italian journal shortly to appear, which will deal with general scientific questions and with the interrelation of different regions of research. Together with the Italian edition there will appear an international edition devoted to articles in any one of four languages. The managing committee consists of Professor Giuseppe Bruni (Parma), Antonio Dionisi (Modena), Pederico Enriques (Bologna), Andrea Giardina (Pavia), and Ingegnere Eugenio Rignano (Milan). The editorial secretary is Dr. Giuseppe Jona, Milan, Via Aurelio Saffi 16.

WE have received the first number of *Cænobium*, published at Lugano. It is a magazine of one hundred and sixty-four pages and contains eighteen articles, reviews of books, and a *posta aperta*, where questions are answered. The articles, which are in French and Italian, with Italian predominating, are short and are most of them in the direction of the philosophy of religion, treated in a somewhat popular manner.

WE have, also, the first number of *La Cultura Filosofica*, published at Florence, Via Manzoni 1, under the direction of Signore F. de Sarlo. The three articles contained in it are entitled, 'Scientific Knowledge according to Mach,' 'The Idea of Evolution in Chemistry' and 'Concerning a Science of Education.' The *Cultura* undertakes to report what is most significant in contemporary philosophy, particularly in its relation to scientific progress.

PROFESSOR DAVID IRONS, professor of philosophy at Bryn Mawr College, died suddenly on January 24. He was born in Scotland in 1870, and received the M.A. at St. Andrews in 1901 and the doctorate of philosophy from Cornell University in 1894. After holding various positions in Cornell University, he was elected professor of philosophy in Bryn Mawr College. He wrote on psychology and ethics.

PROFESSOR G. H. PALMER, of Harvard University, has been giving a series of lectures at the University of Kansas on 'Theories of Conscience.' Professor Charles S. Minot will give two lectures, also, at the University of Kansas, on February 14 and 15, on 'The Biological Interpretation of Life and Biology and Education.'

THE January number of the *Monist* contains a brief and readable article by Hugo de Vries, in which the author summarizes the evidence and his own conclusions concerning mutation in evolution. The article should interest many who have been deterred from reading de Vries's large and technical book.

THE professors of the National Museum of Natural History in Paris have inaugurated a movement for the erection of a statue of Lamarck in the Jardin des Plantes. The minister of public instruction has given his approval to the undertaking.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE NATURE OF EXPLANATION¹

THE purpose this paper would accomplish is to define explanation, to compare it when defined with its genus, knowledge, and, finally, to examine some of its implications and general metaphysical bearings. So far as possible the problem will be kept isolated from other general problems and from the issues raised in solving them, for example, from the points in controversy between realism and idealism, and between rationalism and empiricism.

To explain is to analyze a whole into parts or a complexity into elements that are simpler and whose relations are simpler. This definition states that explanation is an analysis resulting in the discovery of parts or elements, that these parts or elements are simpler than the whole or complexity to which they belong and that the relations obtaining between them and other terms are simpler. The pragmatic value of explanation arises then from the fact that the simpler relationships which it discovers are easier guides of conduct.

Explanation thus defined bears what relation to its genus, knowledge? Psychology tells us that in the growth, or expansion, of information, no matter how interwoven and interfused the living mental processes may be, analysis reveals four processes usually present: to wit, new sensations, association, analytic attention and comparison. Important as the two former processes are in building up knowledge, still their office is rather to present the mind with the raw material that is to become known and, also, in the case of association, to keep the mind effectively in possession of the knowledge it has previously won. Mere sensation plus even extensive association would be knowledge only in the sense that mere sensation is knowledge, though, of course, it would be far more extensive, permanent and useful. Hence analysis and comparison are preeminently the cognitive processes, essential as the other two are; and the breaking up of a content or the unravelling of its components is preeminently what is meant by an increase of information.

¹A paper read before the American Philosophical Association, December 27, 1906.

Any further account of the nature of knowledge would force us to analyze the content, that is, to study the object known. Only by so doing shall we discover the most important element in judgment, the nature of the information asserted.

What does analysis find in the content? Unless our rationalism be of that extreme form which seems to have been shown to be thoroughly false, we can answer: *terms and relations*. Thus judgment, or knowledge in its maturer form, stands forth as the discovery and assertion of a relation between terms.

If this brief account of the nature of knowledge be correct, explanation differs from other types of knowledge merely by being more complete, for it seeks to analyze exhaustively. In short, we may speak of three stages of knowledge: first, mere analytic attention, or discrimination; secondly, judgment; and thirdly, explanation.

Let us return to our definition to examine its implications and general metaphysical bearings. "To explain is to *analyze* a whole into parts or a complexity into elements."

By analysis two quite different processes are implied; the first we may name *substitution*, the second is *analytic attention*. The former is probably more often used to denote scientific analysis, but only the latter should be called analysis. By substitution we refer to a large number of familiar epistemological facts. First in importance is the preference the mind has to focus in attention the content to be interpreted, that is, to substitute a clear perception in place of one that is vague. Again, there is the tendency to substitute for an object as actually perceived another that may be called its standard perception. For example, the table seen in perspective is not rectangular, but we think of it as such, we treat it as such; and the distant object is, as seen, small, but this we correct by substituting our information of it as seen from near by. Another familiar fact is the substitution of the object as seen under a high-power lens for it as seen by the naked eye or through a lens of low power, *e. g.*, the real brain is not that of gross anatomy, but that of histology. Here, again, a new substitution takes place. Beyond the reach of the microscope are the chemical molecules, and the real brain is built up of them. Even here we can not stop, for the chemical atom must give place to the ultimate entities of physics. Finally, our list would be quite incomplete did it not include the reduction of the secondary qualities to primary, and also those substitutions in science where symbols are dealt with in place of the concrete entities.

It is beyond the scope of this paper to interpret these various substitutions except generically. Our problem is: What makes the substituted content preferable to the original? There are at least

two reasons: first, the substitute admits more readily of analysis, its structure being more complex or more open to view; secondly, its terms have more relations, simpler relations, or relations more frequently found and therefore revealing new similarities between objects and between their phenomena. In short, the substitute always gives a far richer or more valuable field for the work of explanation. Thus, though an essential part of explanation, its office is rather introductory to explanation, the latter beginning with analytic attention, or analysis proper.

Here one feels impelled to ask the question, By what right can we do this substituting and yet claim that we are explaining the original? The answer is, We can apply our explanation to the original only in so far as we know the relation or relations between it and its substitute. By this indirect means we learn how the truths our explanation has discovered hold of the original. These relations are various, and are by no means to be identified always with that between whole and part. On this account substitution is a better name for this process than analysis.

Let us consider next the nature of the process we have called analysis proper. Its nature may be made clear by showing what we mean by *simple* when we state that the parts or elements revealed by analysis are simpler and that their relations are simpler. What, then, does 'simple' mean, and are there absolute simples? The simple is the product of analysis, and analysis critically examined will always prove to be analytic attention at work dissecting some apprehended content. That is to say, we mean by the simples the elements or parts discriminated by analytic attention, and by the absolute simples those elements or parts which must forever baffle analytic attention.

That analytic attention does dissect apprehended contents, that the parts or elements thus discovered are simpler than the original content in the sense that sooner or later they commence to baffle analysis, and, finally, that there are parts, elements and relations in the apprehended contents which have until now completely baffled human analytic attention, are all truths easily verified. Of course, we may never be sure that analysis has anywhere reached a limit; but the increasing difficulty with which analysis progresses seems to indicate that we are in many places working at least on the borders of the absolutely simple. In short, the absolute simple is within reach.

This conclusion is open to two important objections. First, may not the real objects of the physical world be indefinitely complex? The proper reply to this objection should be apparent from the foregoing paragraphs. It confuses the two uses of the word analysis,—

substitution and analytic attention. Substitution may have no limits, but analytic attention does have its limits.

This failure to distinguish between the two processes seems to account, at least in part, for the difference in opinion among philosophers regarding the simple. Let reality be infinitely complex, this does not prevent the problem raised at any level of investigation from being solved by information whose terms and relations are simple, for simple terms and simple relations are always within the possible reach of analytic attention.

The second objection urges that knowledge is *organic*, and as such excludes the simple. To put a term in relation is to alter it, whereas the foregoing doctrine maintains that knowledge seeks and at least approximately finds simple terms which are not altered by standing in relation. Moreover, if this doctrine were correct, the sum total of truth would be an aggregate of monadic judgments. They would not constitute a system.

This opposing view contains four objections to which reply must be made. First, *to put a term in relation is to alter it*. But we do not literally put terms in relation, rather we *find* them in relation. Our analysis must not be confused with experimental analysis. To take out from a chemical compound one of its elements would no doubt change all radically. The analysis in explanation is purely an act of attention. We discriminate the terms and relations present in the content; and when we take a term out of relation, we merely turn our attention from the relation to the term. This alters neither.

Secondly, our thesis leaves the following questions quite open. Is the real so complex that it would take an infinity of judgments to interpret any part exhaustively? Or, is the real so truly unique that it would even then escape our judgments and require a higher type of knowledge, a higher immediacy, to apprehend?

Thirdly, we shall be told that a higher level of knowledge, just because knowledge is organic, alters all the truth as held at a lower level. This objection must be met by a flat denial. Hunt the history of science through, and produce a judgment partly true and partly false that can not be analyzed logically into at least two judgments, one quite true and the other totally false. In short, the half-truth of immature knowledge is due to deficient analysis, analysis of the type already examined, and would have been either completely false or completely true had this analysis gone farther. Should it be here objected, such half-truths must be forever the lot of man; we reply, When analysis has done its work exhaustively, then our judgments are either true or false. A higher level of knowledge either accepts or rejects them *in toto*.

Fourthly, Can such a mere aggregate of isolated judgments constitute a system? It can in the purely negative sense that no two judgments may contradict one another. It can so far as inference will carry us from ultimate simple judgments to such cognitive structures as pure mathematics and abstract mechanics. It can so far as some relations exist more numerous than do others. That is, though one simple judgment may not be simpler than another, it may hold more extensively, and thus we may get a principle of classification of judgments. Thus we may conclude, leaving it an open question whether or not a similar statement holds of the real, discursive knowledge in its final form promises to have as its premises a vast aggregate of isolated judgments. Explanation seeks simple terms and simple relations. To deny to science the right to isolate its problems would be to rob it of the instrument to which, above all others, it owes the success of the last two centuries.

Let us return once more to our definition. "To explain is to analyze a whole into parts or a complexity into elements." The definition points out that there are two distinct types of explanation. The first analyzes a whole into parts and, in the wide sense, is an atomic theory; whereas the second gives us abstract general laws. The two, though distinct, are not fundamentally different.

The parts into which a whole is divided are of two kinds. First, they may be entities which could exist quite independently, *e. g.*, the cells of a living body, the wheels of a watch. These are concrete entities. Second, the parts may be abstract entities, that is, parts from which so many properties are thought away,—or, better, to which so few properties are left,—that they would not be theoretically perceivable, *e. g.*, the mass particle of abstract mechanics.

These two types must be kept distinct. Confusing them has been one important cause of such a reaction against mechanism as the *Energetik*. An admirable illustration of confusion is given in Duhem's recent book, 'Physical Theory, Its Object and Structure.' He complains that the English physicists prefer to present things as seen or touched, and therefore they construct models for the details of theory. For them the ether is like glycerine or jelly. An atom is a vortex in a perfect fluid. Whereas for 'the French and Germans a physical theory is a logical system rigorously deduced and satisfying reason rather than imagination.'

Can we not clear up such confusion? If we mean by the existent that which is perceivable, it is invalid to talk of parts as existent which by definition are imperceivable. They are abstract entities, they are mere symbols, and should be treated as such. The rule indicating where the line is to be drawn between existent parts and symbolic parts is, of course, for the scientist to apply, but it is for the

epistemologist to formulate. To talk of an entity and surreptitiously to imply that it is visible when it lacks the condition of visibility, namely, light, is nonsense. If the ether is conceived merely as a medium for the transit of light but is itself lightless, then we are not to talk of it in any terms that imply visibility. Is it like glycerine? Is it a sort of jelly? In some sense, maybe, but surely not in the sense that would make color a property; and probably only in a sense that would make the ether a highly abstract symbol. Thus Duhem is right, such models or similes lack logical precision.

It should here be pointed out also that concrete entities, though in one respect markedly different from the abstract entity or symbol, could nevertheless be arranged in a series which passes over by degrees into that entity, and in turn, a series of these abstract entities could be formed which would pass by degrees into the merely abstract property. So far as explanation is concerned, all this but means the concentration of attention upon a narrower and narrower field; for attention is always dealing with the original, at least in one of its parts or elements, even when we substitute for them mathematical or other signs. To misunderstand this is to misunderstand the nature of explanation, is to regard it, as has been so commonly done from the days of the Greeks until now, as explaining the original literally by means of new entities working behind the scenes. To explain is to describe.

Our definition thus makes the metaphysical status of atomism evident. Atomism can be one of two things, a theory of existent entities and a merely methodological device. In fact, it is both. The former it is and should be only so long as the atoms are thought of as perceivable. It passes into the other the moment the entities are abstract, that is, are symbols. The question at issue between the *Energetik* and mechanism should not be, Are all physical events existentially the motion of mass particles? but, Do the laws and equations of kinetic energy hold of all the other energies, and are they logically more simple? If so, the other energies may be symbolized in terms of mechanism, and atomism here becomes merely a methodological device.

Finally, we come to the last element in our definition: Explanation seeks parts or elements whose relations are simple. The simple relations are the common ones and these, when formulated, give general abstract laws. Thus our definition harmonizes with the usual one,—to explain is to find a universal under which the particular case can be brought.

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INDIVIDUAL AND SOCIAL ETHICS

FOR a full half century past the tendency in ethics has been to emphasize the social factor. More clearly than ever before men have analyzed morality as a social function or concluded, with Leslie Stephen, that moral rules express the conditions of social health.¹ The content of duty has also been considered from the social point of view. So the western world has grown increasingly sensitive to the sufferings, and even to the demands, of the poorer classes in the community. The proletariat has steadily strengthened its claims to a larger share in the common stock of good. In place of the older individualism there has sprung up a consciousness of the responsibility of class to class, of the duties of the individual to the community as a whole and of the community to the individual, accompanied often by the conviction that, for the sake of these ideals, the state must assume larger powers than in the past it has been accustomed to exercise.² The duty of nation to nation, moreover, is gaining clearer recognition. It is true that international obligations may still be conceived in a spirit which would be condemned as unethical in an individual or a class. But if the era of international morality has not yet culminated, it has certainly dawned, and substantial progress may reasonably be looked for in the nearer future.

The causes of this social movement have been manifold. It is about three quarters of a century since Auguste Comte assigned to sociology its distinctive name and its place in the hierarchy of the sciences; it is a few years less than fifty since Darwin published the 'Origin of Species.' The new, or new-old, science was destined to cast a spell over the thought of the succeeding age, in particular to influence reflection in the fields of politics and morals. The theory of evolution spread rapidly from the physical to the moral field, and in the latter directly led to the social conception of ethical existence. Meanwhile forces of a more general kind were gathering momentum. The continuing social unrest and the growth of religious unbelief turned attention to the sore problems of mundane living. As the age wore on proof accumulated that the political revolution of the end of the eighteenth century, if it had furthered civil liberty, had failed to produce the economic prosperity which also had been augured from it. The development of communication and of its instruments enlarged man's social consciousness with reference to ever widening circles of his fellows. Industrial progress has accentuated the distinction of class from class, has deepened the problems

¹ 'The Science of Ethics,' Chap. IV., § II., *et passim*.

² Cf. the writer's 'Transitional Eras in Thought,' pp. 212-225.

of wealth and poverty, and in its later corporate phases has, by its own effects, brought the questions of social organization and social duty into the clearest possible prominence.

That great benefits have followed from the socialization of ethics is not open to question. Beyond all doubt its results deserve to be counted among the most valuable as well as among the most significant consequences of modern ethical development. A long step forward has been taken in the evolution of moral theory and in the amelioration of conduct. If practise at times lags behind principle, that is a recurrent phase of progress which should have no more importance assigned to it than in other cases of a similar type. The fact that our problems have been solved only in part, that questions of the gravest nature still press for consideration, must also be recognized as a normal incident of intellectual and moral growth.

The exaggerations to which social ethics is subject are more serious. Probably there are no terms employed in present thinking which stand in greater need of precise definition than 'society' and 'social,' with their derivatives. In the discussions of the day they are used to designate anything and everything from charitable organizations to collectivistic theories. "If you only join the two words 'social' and 'evolution' in your speech nowadays, everybody at once listens to find out what you have to say,"³ Professor Royce has remarked, although he doubtless believes in both the movements which he parodies. Believes, that is, within limits of reason and definite application. But it is just these limitations which are apt to be overlooked, since they depend on principles which recent thinking, for all its value, has tended to ignore. In ethics an important illustration is furnished by the question of the ethical individual. Who, or what, in the last analysis forms the subject of morality? Can it ever be the group, the class, the state, or is it always in the last resort the individual person? Collective individualities, of course, there may be, and 'moral persons' in contrast to the individuals in the literal sense of whom they are composed. This distinction is familiar and possesses inherent force. But, considered from the strictly ethical standpoint, has it ultimate significance? Can moral responsibility be fully transferred from the real person to the group of which he forms a member, no matter how closely the bonds are drawn between him and his associates or how completely they act together as a collective unity? Obligation is sharable, indeed, but can it be altogether alienated? In fine, is not each man responsible for his own deeds, whether he act by himself or along with others, although in the latter case the plurality of the agents may justly be considered in the allotment of praise or blame?

³ *Philosophical Review*, March, 1904, p. 130.

Such questions, moreover, are not mere matters of theory, but practically important; especially at the present time do they bear upon issues of serious moment. As remarked above, the growth of collective industry has furthered the socialization of moral ideas. But there is a reverse side to the picture, which is to be found in the substitution of corporate responsibility, or license, for the sense of individual obligation. Not only is it assumed that the corporation is free from duties to which the individual would consider himself bound, not only may it take action which for himself alone the latter would unhesitatingly condemn; his responsibility is also held to be absorbed in that of the body as a whole. When it is thought through to its results, however, this conclusion shows itself unsound. Obligation may be altered or diminished by being shared with others; it can not be extinguished, the individual can not divest himself of responsibility for the action in which he takes a part. Therefore the demand for a quickening of conscience in regard to 'corporation morals' is grounded in principles as well as proved desirable by lamentable concrete results. And here as elsewhere a clearer appreciation of ethical truth will give needed support to moral practise.

A second ethical question suggests similar inferences. This concerns the object of ethical action, as the former dealt with the subject of morality. To whom, or to what, is right conduct due? On what, or on whom, does its outcome terminate? To our fellow men, on society, would be the unhesitating reply of the overwhelming majority of later moralists. Differing from one another as radically as the moralists of other ages have done in regard to the ultimate nature of right and wrong, they would largely agree in basing their analyses on the social phases of duty. In particular, the ethical writers of the evolutionary school have given prominence to this aspect of conduct. In its origin morality is described by them as a function of tribal existence. Conscience is believed to have developed with the experience of collective need. Obligation means responsibility for the adoption of such courses of action as will conduce to social welfare and efficiency. Duty toward self loses its significance in comparison with duty toward other men, or the duties of self-preservation, self-maintenance and the like are interpreted as depending on the contribution which the healthy, vigorous, developed individual makes to the common good.

Exceptions to this tendency, of course, have not been wanting. One of the strongest elements in Mr. Spencer's ethics—suggested, perhaps, by his personal experience—was the emphasis which he was wont to lay on the duty of the individual to care for his own well-being. In his doctrine of the superman Nietzsche raised a less measured protest against the morality, as he conceived it, of the

unsuccessful and the weak. The critical examination which is making of the principles of socialism reenforces from the side of economic science the ethical recoil toward juster views of the relations of individual and social duty. There is room, however, for further progress in this direction. If responsibility in the last analysis is personal, it is also true that the society on which the moral action terminates is made up of individual units, among whom the agent himself is one, with personal rights and duties to himself as well as obligations to regard the claims and needs of fellow men. Nay, further, it is but half a paradox to say that all duty, including our duty to others, is in one essential aspect duty toward ourselves. For each man owes right conduct to himself. It is part of his moral manhood, an element in his own self-respect, to observe ethical rules, including such as primarily benefit his brethren or the community of which he and they are fellow members. In a sense, therefore, moral obligation is always obligation to one's self.

The practical consequences of this principle also are evident. Added to the implications of the earlier conclusion, they forbid the sinking of the individual in the mass. Ethics is a matter of individual responsibility; it is also a matter of personal self-respect. Obligation may be shared, but it can not be alienated. The service of others includes an element of duty to self. The spread of such principles would not diminish the benefits which have sprung from the social view of morality, although it would tend to correct the balance of ethical theory. Their acceptance, on the other hand, would elevate and fortify the ethical practise of our time.

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DISCUSSION

PRAGMATISM VERSUS SCIENCE

ACCORDING to Professor James, science has 'broken down,' and to this pragmatism, or humanism, 'owes its being.' Whatever this penetrating philosopher believes deserves public consideration. Nevertheless, science embodies the beliefs of the greatest number of conservative and weighty thinkers in present civilization. It is well, then, to review both sides of the case before accepting the new gospel.

The 'two states of mind' (Professor James's phrase) originate, largely, in different assumptions regarding 'the world of physics.'

Every informed man to-day distinguishes between his vision or perception of another man, and the other man himself. From this

percept he infers the other man's mind. This sort of inferring is widely called paralleling. Both pragmatism and science parallel 'the line of evolution,' as we commonly say, down approximately to protoplasm. They similarly infer human minds, monkey minds, infusoria minds, etc.

At protoplasm pragmatists hesitate. And further down the line they do not carry out this paralleling. For perceptions of tables and of granite they do not make similar inferences. Instead, they identify such objective percepts as the ultimate objects themselves. For pragmatists the physical world is the sum of such percepts.

For pragmatists, therefore, 'that table' and 'percept of that table' have one meaning. Likewise, 'the physical world' and 'our percepts of the physical world' have identical meaning. This, although 'Professor James' and 'percept of Professor James' have very different meanings.

Also, and consequently, there is a fundamental looseness in every pragmatist's meaning of 'a thing.' In Professor James's famous explanation of 'how two minds can know one thing,'¹ he calls two percepts, in the two minds, one and the same thing, though he admits that the two percepts are much unlike. Thus he calls 'one' what are as much two as the minds are two. Likewise, regarding all other 'things,' pragmatists call 'one thing' what, to science, are innumerable different percepts, in innumerable separate minds. To science this seems as grave a source of error as would be that of calling and treating all the stars of the firmament as 'one star.' How this looseness contributes to the belief that science has broken down should be kept in eye.

In any case, since for pragmatists 'the physical world' is merely the sum of human percepts and concepts of it, since for them no other things and firmament exist, therefore it is easy to see how they derive, from this 'human' physical world, their belief that the 'dogmas' of science concerning it are mere 'human inventions.' And from this to the belief that these 'dogmas' are subservient to one's esthetic and religious ideals, and are to be accepted, rejected or modified accordingly, is an inevitable step for certain temperaments. In passing, we note that both pragmatism and Christian Science alike originate with Berkeley, both hold his notion of the physical world, both measure 'truth' similarly, and both are similar 'states of mind.'

In strong contrast with all this, science infers something, similarly, for all our objective percepts and concepts. It does not identify our physical percepts with their objects, does not intend the same meaning by 'tables,' 'things' and 'physical world' as it does by 'perceptions of' them. It consistently makes as sharp distinction

¹ 'How Two Minds Can Know One Thing,' this JOURNAL, Vol. II., p. 176.

between these meanings as between 'Professor James' and 'perception of Professor James.' Also, it does not loosely confound 'one and the same thing' with innumerable unlike perceptions in innumerable separate minds. It is not surprising that such vastly different assumptions, meanings and uses of words as these, respectively, of pragmatism and of science, weave to very different 'states of mind.'

There are scientists who are pragmatists. But officially and in accord with the inmost beliefs of by far the greatest number of its leaders and followers, science rejects the Berkeleian notion. Professor James tacitly admits this when he says 'science' has broken down. Nevertheless, science does not reject this notion naïvely. Scientists are as wise of Berkeley, of Kant, of the nature of our percepts and of all the latest psychology as are perceptualists. But they see alternative conclusions to those of pragmatism.

If the above sort of mental parallelism be carried out for all 'objects' or for 'the entire content of space,' and if the plain man's world be preserved as well, this gives us two physical worlds, one mental, the other spatial: twin worlds, parallel throughout, whole for whole, and detail for detail. These furnish us with double objects of knowledge, universally. Therefore 'Occam's razor' bids us reject one of these worlds as superfluous and improbable. And since it seems best to decide that the universe (of which our own minds indubitably are parts) is of one general sort throughout, therefore it seems best to decide the above choice in favor of a physical world in some way mental. Yet this need not leave us pragmatism.

To conceive a non-spatial world to take the place of the spatial one which science still officially but tentatively presumes, is admittedly difficult. Pragmatists, with all other perceptualists or followers of Berkeley, declare the feat impossible. Hence their refusal to carry parallelism further down than protoplasm, and their identification of the world of physics with the sum of our body percepts. Nevertheless, a large school of modern opinion holds that there are ways in which the difficulty may be overcome.

Formerly the physical world was conceived to be comprized of innumerable 'material attributes,' each and all of which were incompatible with mind. Also the human mind was conceived to comprize numerous faculties and features equally incompatible with matter. Under these conditions the difficulty of identifying mind with matter did seem insurmountable. But of late both physics and psychology have done vastly much to simplify the problem.

Physics, according to many of its greatest authorities, has simplified itself by reducing its physical world to one homogeneous, universal fluid; or, to state the case more exactly, by bringing all the

concepts with which physics has heretofore busied itself under one general concept of an universal, mutable space. Therefore, in so far as physics is concerned, 'the difficulty' is now reduced to conceiving a mental universe which this concept of 'one mutable space' may perfectly symbolize.

Meanwhile psychology has equally simplified its conception of mind. Two of its leading schools, those of Professor James and of Professor Wundt, have reduced all minds to content processes, to content of one general sort, like our colors, smells, tastes and other sensory elements. They conceive all such content to be 'continuously transformative': for examples, that a color utterly transforms into and becomes, perhaps, a taste or a sound; that a vision or perception turns, perhaps, into a concept or idea, this into a train of reasoning, this into a succession of percepts, concepts, ideas, judgments, beliefs, emotions and so on, throughout life.

According to this conception, all mental processes whatsoever reduce to such content transformations. Every individual mind is such a continuous content process, from its birth forward. Only its present transforming state exists at any given time. All past states cease to exist, absolutely. The universe comprizes innumerable such minds, of innumerable grades. All alike begin with some simplest possible condition of mere mental content, and all alike grow or develop, throughout their transformative stages, in accord with the same general laws of mental genesis. But some grow more and higher than others. Hence the 'line of mental evolution' comprizes, first, the simplest possible minds, then all the rising grades, such as infusoria minds, lobster minds, monkey minds, human minds, and we know not what other minds of still higher attainments.

There are still schools of philosophy which do not accept this simplified version of the mind and of the universe. But confining our present discussion to those hypotheses, open to science, which are most in accord with those of Professor James, it is now to be observed that the difficulty of conceiving a physical world which our all-embracing concept of space may symbolize, resolves, according to the above version, into that of conceiving what 'the mutable space' of present physics may mean or signify in terms of this continually transforming mental content distributed in these innumerable minds of various grades.

The key to this is found, by some, in presentative genesis. 'Presentative form' is a phrase denoting the make-up of any present state of mind. Of these forms there are three main types: fused, numerical and spatial. Fused forms show no parts, either numerical or spatial; smells are of this type. Numerical forms show parts, but no spatial arrangement; sound harmonies example this type.

Spatial forms show both numerical parts and spatial arrangement; our sight and touch presentations are of this sort.

In Kant's day these 'categories' of form were attributed to separate 'faculties.' To-day it is demonstrable that they are different stages of presentative development, which shade each into the next higher, under one and the same law of genesis. All alike derive from respective degrees of serial stimulation of our nerve ends; or, more exactly, from the order of activity of our brain cells, to which such stimulation leads. This may be stated in terms of Professor James's 'pure experiences' instead of either 'stimulation' or 'brain cells,' yet its significance remains unchanged.

Smell nerves, in the nose, are always stimulated *en masse*; smells are always fused. Taste stimulations are mostly 'massive'; tastes are mostly fused. Touch stimulations, on the roving tongue, are in fine series; from the tip of the tongue we get our finest tactual space presentations. The touch nerves of the skin afford lineal stimulation in every direction; their results are spatial. The heat and the cold nerves of the skin, though they have the same arrangement as the touch nerves, are affected by temperature changes *en masse*; their sensations are fused. The nerves of sound, in the ear, are hit sometimes together, but far more often serially; we hear some harmonies, but sounds are never spatially arranged. Muscle, visceral and pain nerves for the most part are stimulated *en masse*; for the most part their sensations are fused. The nerves of the eye are stimulated in finer bundles than anywhere else, and in every direction; our visions are most clearly spatial. Finally, the same nerves that ordinarily give us 'a straight line' may be educated to give us a triangle or some other figure.

Throughout all our senses, then, our presentative forms follow one general law of continuous development or genesis. There is no law of psychology, or of physics, more demonstrable; there is none more important. The significance of this law, for our main theme, is momentous in more ways than one, and may prove decisive.

According to modern genetic psychology, and especially that of Professor James, the mind is an indivisible whole or solidarity. So also is its genesis; from birth, it develops as a whole. Always it knows as a whole. Therefore, in view both of the mind's action and its genesis, its 'spatial faculty,' if we roughly so call its power of knowing by means of our space presentations, must be indivisible from its knowing power as a whole, must be 'warp and woof' with it at all times. From birth they grow up together and inseparably. Our above law of genesis explains the fact, and makes the deduction imperative. In Kant's day of separate faculties it was easy to reject that of space, and to trust only certain supposed higher faculties.

But to-day this is absurd. To suspect one faculty is to suspect all; they are indivisibly one. For example, if we reject the spatial testimony of our senses, we must not only reject their numerical testimony as well, but also the power of the mind to know numerically at all. All alike are the indivisible product of one and the same historic genesis, and the spatial testimony is the higher and the inclusive product.

But in face of all this we find Professor James, with other perceptualists and pragmatists, accepting the testimony of our spatial percepts and concepts for inferring minds 'all the way down to protoplasm,' yet rejecting such testimony 'below protoplasm,' and for inferring a physical world in some way mental, apart from *all* our percepts and concepts alike. In view of Professor James's own psychology, therefore, his method of inference seems in the highest possible degree inconsistent and suspicious. In view of his psychology, the Berkeleian inference is now, unmistakably, an anachronism. For it one must divide the indivisible knowing power of the whole mind, so much insisted on by Professor James for all else, and must accept only so much of it as suits one's 'state of mind.' Possibly here is another clue to the pragmatic belief that science 'has broken down.'

Our genetic law yields revelations regarding the physical world of still greater moment. In any mind, every line (such as we see, or feel by touch) presents spatially the non-spatial elements or 'pure experiences' from which it has genesis by reason of their forerunning serial order of occurrence, 'activity' or 'stimulation.' The line not only represents these non-spatial elements, but also their genetic or habitual order of activity. The reversible, or, as we commonly say, the fixed, order of the line from end to end reveals a correspondingly fixed or habitual order of activity in the elements of universal mental content so presented; those from which they have genesis by our law. Through the line we *know* these elements and their 'fixed order.'

But all our spatial presentations or experiences are made up of such lines. Through such presentations we similarly know all their corresponding regions of cosmic origin and their order of activity. Moreover, all psychologists now agree that these spatial presentations develop into our spatial percepts of objects and of things; these, in turn, into our corresponding concepts of things and of space; these, into our final concept of one universal space and of its contents. Therefore by tracing back this genesis (from concepts to percepts, from percepts to presentations, from presentations to their component lines, and from each spatial line to the non-spatial mental elements from which they derive) our genetic law enables us to deter-

mine the ultimate universe for which science and philosophy have been so long in search, enables us to determine the mental universe which all our percepts and concepts 'know,' and enables us to do this satisfyingly at once of the precision demanded by science and of the empiricism insisted upon by Professor James and all pragmatists.

This gives a possible alternative to the 'human world of physics' assumed by pragmatists, gives a universe of mental content whose 'continual transformations' constitute a non-spatial 'world order' which satisfies every demand at once of physics and of psychology. In this fixed world order each transformative part has a 'functional place' corresponding to the 'spatial place' which symbolizes it in our percepts, concepts and every-day mental life. Each mental part transforms accordingly as every other mental part transforms, throughout the universe, transforms according to the law of gravity and all the other laws of physics and of the psychophysics of modern psychology. In short, all these laws apply to this mental universe precisely as they aforetime were conceived to apply to the material universe.

Just as in ordinary physics certain fundamental laws apply to all matter, and other special laws apply only to certain kinds of matter, so, under this new conception, do all laws still called physical apply to and describe the transformations that occur in mental content without regard to the individual minds that contain it; while other special laws, those of individual psychology, govern and describe the transformation processes in particular minds.

According to this alternative it is conceived that the universe, in so far as our knowledge of it extends, began with one primitive, homogeneous mind; and that the genesis of separate individual minds and of rising grades of minds, such as 'evolution' calls for, transpired, and still transpires, by one and the same system of upward-trending laws.

At first sight this seems to necessitate the 'cracking in pieces' and 'gluing together' of mental content, which Professor James vehemently declares is 'inconceivable' in view of the indivisibility of 'a mind.' But even he conceives that mental content 'comes into' and 'goes from' every mind. And though we conceive this 'coming and going' to be from nowhere and into absolute nothingness, as he apparently does, still it is open to us to conceive that it is reciprocal: that when any content 'goes from' any mind, in Professor James's own way, a precisely similar content 'comes into' some other mind, also in his own way, and all without 'cracking' or 'gluing.' How often does philosophy hang on mere metaphor!

This removal of Professor James's fundamental objection, it

would seem, leaves him no reasonable excuse for persisting in his Berkeleian hypothesis and rejecting the above alternative. The latter starts from his own psychological premises, and never transcends them. It avoids the no longer excusable inconsistencies of 'stopping at protoplasm' and of calling innumerable percepts one and the same thing. It conforms to the unity of the mind's knowing power and to the unity of its genesis. It preserves the indispensable significance of 'space' and of 'place.' It preserves to physics its cosmic validity, to science and to philosophy a uniform language, and to all language its essential meanings. It unites physics and psychology, science and philosophy, experience and religion, all on one workable ground. All of which things pragmatism hopelessly upsets. Above all, it promises a united advance of unprecedented moment to mankind.

Science has not committed itself to this particular alternative. It does hold fast till some equivalent of it 'proves out.'

Before comparing the larger promises of science and of pragmatism, we may examine their contrasting methods and their definitions of truth.

Pragmatism declares itself to be a method of discovering truth in consequences. The meaning of any concept 'lies in its consequences.' "The truth of any statement *consists* in the consequences, and particularly in their being good consequences." Truth is 'highest satisfaction,' 'highest belief.'

The method of science already includes taking account of all possible differences and consequences. It also includes search for and interpretation of present data. Pragmatists can differ from this only by abandoning these latter and confining themselves to speculation as to the future alone. It seems incredible that they should consciously intend this, however unmistakably their writings declare it and their philosophy bears evidence of its having been done.

We now reach the most famous feature of pragmatism, its definition of truth. "At each and every concrete moment," according to Professor James's official formula, "truth for each man is what that man 'troweth' with the maximum of satisfaction to himself."

To all mankind, heretofore, truth has meant 'conformity to fact.' Facts may conform in two main ways. Barometers conform when they themselves are alike. Things that are thus alike have been called 'truthful copies.' Barometers are not thus copies of the weather, yet they conform to the weather in their reactions. Such reactions have been called 'truthful reactions.' The gist of pragmatism, in so far as its definitions of truth and of knowledge are concerned, lies in its exaltation of reaction, and its disparagement of copying even to the extent of denying it wholly where, heretofore, it

has been deemed indispensable both to truth and to knowledge. This is exemplified in the following quotation from Professor James: "Let the reader suppose himself to constitute for a time all the reality there is in the universe, and then to receive the announcement that another being is to be created who shall know him truly. How will he represent the knowing in advance? What will he hope it to be? I doubt extremely whether it could ever occur to him to fancy it as a mere copying. Of what use to him would an imperfect second edition of himself in the newcomer's interior be? It would seem pure waste of a propitious opportunity. The demand would more probably be for something absolutely new. The reader would conceive the knowing humanistically, 'the newcomer,' he would say, 'must take account of my presence by reacting on it in such a way that good would accrue to us both. If copying be requisite to that end, let there be copying; otherwise not.' The essence in any case would not be the copying, but the enrichment of the previous world."

On its face, this reminds one of the casuistry by which the hands of the clock exalted themselves above the pendulum and the weights. If the reader would fancy anything of the kind, he himself will judge. In any case, the fact is indubitable that both reaction and resemblance, or 'copying,' are equally indispensable to all truth and knowledge of the ordinary sort. According to Professor James's explanation of 'how two minds can know one thing,' this knowing is constituted wholly by the appearing, in the two minds, of two *like* perceptual processes at appropriate times. Without likeness or 'copying,' therefore, no two minds could ever 'know one thing,' even according to Professor James's own account of the matter. And this is but saying that no mind could ever know what any other mind, being, or thing-in-itself might be like, could ever know it in the ordinary sense of knowing, *no matter how he reacted to it*.

Most criticisms of pragmatism have been directed against its denial of 'copying' as involved in its definitions of truth and of knowledge. In the heat of discussion it has been overlooked that these definitions are quite as irreconcilable with their pretended exaltation of 'reaction,' as with the indispensableness of 'copying.' If Professor James reacted to any given sort of divine direction, now with 'satisfaction' and as often with 'dissatisfaction,' plainly there would be in this as little 'conformity of reaction' as 'truthful copying.' Moreover, in order to defend the belief that divine satisfaction is a reaction to divine direction, it is not necessary to violate all established definitions of truth. Also, it is not necessary to 'break down' all language in order to prove that all science has 'broken down,' in case it has done so. Suppose a man does react to a pouring rain, with the belief that he is walking in sunshine, and with 'the maximum of satis-

faction to himself at that concrete moment,' as an insane man well might: hardly will Professor James call this concrete instance of throwing 'a true throwing.' Just why, therefore, his abstract definition of truth is so much more attractive to the 'pragmatic state of mind' than the innumerable concrete instances that obviously contradict it, can only be accounted for by the 'state of mind' itself. We can only infer that Professor James contends for his definition of truth, as he does in his 'Varieties of Religious Experience,' for all conditions of 'trance,' be they alcoholic, epileptic or 'religious'; that its authority is likely to be conceded only by those who have experienced the 'trance.'

No man who follows out the dictates of modern psychology to consistent inference of a physical world which satisfies all our perceptions and concepts, will fall into the belief that 'ether is a noun for the verb to vibrate,' that the laws of physics are 'mere human inventions' and that science has 'broken down.' The man who from carelessness, or academic habit, starts from the Berkeleian anachronism and inconsistently conforms his inferences to it, is already far on the road to that belief. Yet back of both starting-points, temperament is apt to be a deciding factor in the making as well of a pragmatist as of a scientist. Education and circumstance may counteract it; they also may confirm it.

The respective temperaments of pragmatism and of science may very significantly be called the impatient and the patient.

To the impatient man the betterment of mankind by the toilsome researches of science, is too remote. To him the regeneration of human souls by a better system of education and by a better system of social and industrial economy, is too slow a method. He must have immediate evangelism. To him the conception that the value of life is in the living, is repulsive. That the joys of heaven are to be found in the direction traversed, he resents. He demands immediate translation. He frames his philosophy and his religion accordingly.

Nevertheless, the 'patient' interpretation of life, of science and of heaven has 'broken down' only for the impatient.

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REVIEWS AND ABSTRACTS OF LITERATURE

La misura in psicologia sperimentale. ANTONIO ALIOTTA. Firenze: Galetti & Cocci. 1905. Pp. 253.

This treatment of measurement in psychology is a work of criticism, and very acute criticism, written, however, by one who does not follow

the analytical method so narrowly as to despise acquaintance with the detailed results of experiment. The book might, indeed, serve as a useful survey of the different ways in which measurement has been attempted in psychology, and of the results achieved. But its whole aim is critical.

The main thought of the author can be stated in brief compass. The data of psychology are solely the facts of internal experience, and these, taken simply as they are, without reading into them the results of analysis and hypothesis, are not quantitatively determined. One psychological fact differs from another in quality, and that is all. It is impossible to find in consciousness a system of quantitatively related data. Therefore measurement can not be applied in pure psychology, nor can laws of mathematical form have any direct validity there. Indirectly, such measurements and laws may be of service to psychology, but only as suggestive or as symbolic.

Quantity must be conceived as continuous and divisible; psychological facts are neither. To apply measurement to conscious phenomena, they must be conceived as different from what they appear, but so to conceive them is to destroy, not to explain them. "A psychological fact is as it presents itself in consciousness; if we conceive it otherwise, if we seek to represent it in some other manner, our conception applies perhaps to some other possible psychological fact, but has nothing to do with the fact under examination" (p. 58). This, a fundamental error of the psychophysicists, is unmasked in every disguise in which it has sought to commend itself. First Fechner, in order to get a measure of sensation, had to conceive the perceived difference of two sensations as itself a sensation; but introspectively 'the act of observing a difference between two sensations does not in the least consist in the representation of a sensation which is the difference of the first two' (p. 59). According to Wundt, next, psychophysics measures, not, indeed, sensations, but the perceptibility of sensations. But sensations are not present *to be* perceived, but only *as* perceived; nor is perceptibility a psychological fact—only actual perception is such. Or if, again, with Ebbinghaus and Meinong, we suppose psychophysics to measure the difference or similarity of sensations, we must, since the methods of psychophysics depend on the measurement of errors, conceive of error as being possible in judging differences of sensations, and thus conceive of the sensations as having an existence independent of our perception of them. As to Foucault's interpretation of psychophysics as measuring the clearness of sensations, it is simply not true that clearness, as a purely psychological condition, is so closely correlated with the accuracy of perception which the methods of psychophysics determine that the latter can be regarded as a measure of the former.

Most interesting, perhaps, is the author's criticism of the view of Stumpf that what is measured is the accuracy of sensory judgment. This is, indeed, measured, but it is distinctly not a psychological datum. Error of judgment is not pure psychological fact; the false judgment has the same psychological reality as any other state of mind. Error comes to

light only when the psychical fact is compared with the physical fact judged, that is, when the psychical fact is examined, not for itself, but as a means to knowledge. What is measured is the difference between the unaided subjective estimate of a physical fact and some more exact determination of this fact. It is always a physical measurement. A science treating of the accuracy of judgment is thus not psychology, but gnoseology.

The fundamental assumption of psychophysics, namely, that sensations are more or less intense, is itself false. They have, no doubt, a certain intensive quality, as they have a certain extensive quality or 'extensivity,' and this intensive quality comes into play in the perception of the intensity of physical processes. But it is nearly as naïve to infer thence that sensations possess intensity, as it would be to argue from the fact of space-perception that sensations have extent. Psychophysics, as a branch of gnoseology, determines the accuracy of our perceptions of intensity; as a branch of psychology, it should set itself to the task of contributing to the analysis of the process of intensity-perception, in which field there are real problems analogous to the moot questions of space-perception and of time-perception.

This section on psychophysics is the longest and most brilliant part of the work. The rest of the book treats in turn of 'psychochronometry,' 'psychodynamics,' and 'psychostatistics,' the latter section being quite brief and inadequate in comparison with the rest.

Under the head of psychochronometry are discussed the measures of simple and complex reaction times. Severe strictures are passed on the elimination method, by which the duration of the processes of perception, discrimination and association is supposed to be measured. The mental process in these higher acts is not really compounded of the simple reaction plus something; the whole process is different, the constituent parts are modified by their union, and their duration is therefore not reliably determined by the method of elimination. Moreover, most experimenters have not bothered themselves to ascertain empirically, by introspective observation during the experiments, exactly what mental processes were being timed. The mental process was simply schemed out beforehand. Psychical facts can, of course, theoretically, and sometimes practically, be measured as to their duration, but as this is the only measurement of which they admit, quantitative laws can not be founded on it; for such laws require the measurement of at least two related quantities.

Under the head of psychodynamics are treated, first, the attempts to measure mental energy in terms of its muscular effects. Lehmann's mental energy turns out to be either physical or else a nondescript; it is not a psychical quantity. Measures of the force or quantity of memory are likewise not psychical measures. The consciousness of six nonsense syllables is not twice as big a consciousness as the consciousness of three; it is simply a different consciousness. And the ability to reproduce the syllables at will is not a psychical fact, nor is the degree of retention a psychical magnitude. Measures of attention, in terms of

distraction or otherwise, are not measures of the psychical fact of clearness; and measures of the range of consciousness are merely determinations of the number of objects of a particular sort which can be grasped as a unitary group. Measures of mental work and fatigue are measures of the physical effects of mental action. Mental tests do not reveal quantitative differences in the mental states of individuals: the mental differences are qualitative, the quantities are physical. In general, functions are not introspectively observable, and are not psychical facts; and the measurement of their efficiency is not a psychological measure.

The author's criticism is carried much more into details than is indicated by the foregoing summary. There is much in the book that is not strictly new. New is, perhaps, the thoroughness with which the range of psychological measurements is examined from the introspectionist's point of view, and new also the clearness with which the criticism is presented. The book makes good reading. There are a few apparent errors in citations of facts, a few inaccurate references to publications, a goodly sprinkling of typographical errors, and an evident disposition on the part of the author to favor the simplification of English spelling, as witness 'Kirkpatrick,' 'Mak-Kendrik,' 'Cattel' regularly, with 'Kattel' as a variant.

Two main objections to the thought of the book occur to the reviewer. First, something too much is made of the heterogeneousness and discontinuity of conscious facts, and of the consequent inapplicability of measurement to them. Were there no homogeneity, no chance for classification, there could be no descriptive psychology. Mental facts do show degrees of likeness and difference, and can sometimes be arranged in ordered series. A set of twenty color tones can easily be arranged by an untutored person in order of likeness, and gaps in the series can be observed. This is an ordering of sensory qualities, and involves something very like a rudimentary measurement. Similar arrangements can be made on the basis of intensity or of esthetic effect. Psychical facts are thus seen to be related in definite ways, some of which form the basis of measurement; though it is no doubt true that the problem of measurement does not clearly arise within the psychical sphere taken alone, and that the fully developed concept of measurement can not be transferred to that sphere without doing it violence.

Objection should also be raised to the loophole which the author allows for measurement in psychology. He does not seem willing to follow his logic to the bitter end, and so exclude quantitative work altogether from a share in the furtherance of what he defines as psychology proper, the 'morphology of consciousness.' It may be that consideration of the present state of the science bluffs down his logic, and that, just as history disposes of the Kantian query whether psychology can become an experimental science by showing that it has become one, so the applicability of quantitative methods could not well be denied in the face of the wide application that is made of them. Are all these measurements valueless? No, answers the author; though psychical phenomena are measured in none of them, yet indirectly they fix the mental

facts through the medium of related physical facts, and add precision to the results of introspection. Thus does the author, after standing so valiantly against it, fall captive at last to the psychologist's fallacy. Psychical facts are such only as they are revealed in inner experience; to infer them from the results of physical measurement is false logic, and any precision gained in thus supplementing the results of introspection is factitious. The example of brightness contrast, adduced by the author in this connection, is far from convincing. Measurements of the contrast effect do not contribute in the least towards a description of consciousness, but merely state more precisely the relation between the contrast effect and its physical conditions. What quantitative psychology is concerned with is, indeed, not the description of consciousness, but something which is probably of much more importance, namely, the causal relations subsisting between mental events and their physical conditions and consequences. Cause and effect are on the whole a more important study than morphology; and so far from the use of quantitative psychology being the furtherance of the description of consciousness, it will probably in time be recognized that the main value of descriptive psychology lies in its contribution toward the discovery of causal laws which overpass the bounds of the psychical. This is not psychology, will be the retort. But psychology, after all, is what we make it.

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L'Attention spontanée dans la vie ordinaire et ses applications pratiques.

ROERICH. *Revue Philosophique*, August, 1906. Pp. 136-159.

With the following statement giving the limitations of his discussion, M. Roerich begins his subject: "Spontaneous or primary attention is distinguished from voluntary attention in this, that while in the former the subject becomes attentive through the force of an impression or the suggestion of an idea from without, in the latter the subject becomes attentive through a process of conscious initiative and contingent choice" (p. 136). There are two aspects in this kind of attention, which may be called the primary and the apperceptive. "Primary attention is the effort by which we try to know more fully a fact or an object which vividly impresses our sense-organs, to satisfy ourselves with those aspects of the situation which have stimulated the organism" (p. 136). This is well illustrated by our reactions to a cannon shot, a light, a blow, sufficiently strong to rouse us from a state of indifference. In a similar manner a very weak sound, an indistinct light, a sigh, may excite our attention. As the author insists, primary attention is usually mixed with other forms of attention, and any treatment of it as such must be, therefore, a logical one.

In a number of interesting examples M. Roerich shows the function of primary attention in practical life. I shall give only one. Suppose a man, lost in a deserted field, to see a light in the distance. What can it be? He proceeds to investigate and pass judgment just as does a scien-

tist in the laboratory. He sees whether the light moves or not, whether it grows brighter or dimmer, whether it is accompanied by any voice, noise, barking of a dog, rolling of a carriage, etc. He adjusts his actions accordingly. His first stimulation is an example of primary attention. His mental operations after such stimulation show the working of apperceptive attention.

As regards the pragmatic aspects of primary attention we may distinguish laws of attention from rules of attention. The basic laws of primary attention as scientifically determined are the following:

"I. If the subject is attentive, the reaction time is very short. If the subject is inattentive (which is the case in involuntary attention), the reaction which the impression excites takes a much longer time" (p. 141).

"II. There is no such thing as voluntary attention sustained for more than a few seconds at a time. What is called sustained voluntary attention is a repetition of successive efforts which bring back the topic to the mind. . . . No one can possibly attend continuously to an object that does not change"¹ (p. 141).

"III. A certain period of time is necessary between changing perceptions in order to allow the judgment to operate upon them. If the time is too long the perceptions become isolated and are effaced. If the time is too short the perceptions become confused and the attention can not seize them with sufficient ease" (pp. 141-142).

The maxims or rules resulting are the following:

"I. To rouse the primary attention and make it persist, the impressions which follow one another must be graded either in intensity or in vividness" (p. 142). For example, a lecturer should not use a monotonous tone, but should vary his words in pitch, intensity, inflection, etc.

"II. The regular repetition of the same impression or of similar impressions will not rouse the attention unless there is between the successive impressions a period of time which is neither too long nor too short" (p. 142). The series of slides in a stereopticon exhibit would thus demand a proper spacing, as it were, in the showing.

"III. To rouse the attention, an object must be clearly and distinctly presented" (p. 142).

"IV. Only those impressions of dissimilar nature can be associated which belong to the same object" (p. 143).

"V. It is by contrast of successive or simultaneous impressions that primary attention is most surely excited" (p. 143).

Concerning apperceptive attention we may consider it as due to ideation of a 'preperceptive' nature, to use the expression of Lewes. "It is a special form of spontaneous attention which is roused by the appearance of a new impression or idea among those previously acquired" (p. 144). The appearance of such a new impression is well illustrated by the entering of a new comet into an astronomer's horizon. This is at once apperceived by him, though to the general observer it might remain unnoticed. Similarly the absence of some familiar impression will also rouse the

¹ The author takes this from James, 'Principles of Psychology,' II., p. 420.

attention. When a shepherd assembles his flock, if there be one missing he will apperceive it almost intuitively. He does not need to recount his flock. It is as if a ring in a chain were suddenly removed. In either case certain acquired ideation masses are necessary.

Rabelais and Rousseau knew well how to utilize these forms of attention. So, too, Cicero in his orations and Cæsar in his political manipulations made use of them. And in modern fiction the skillful novelist does not present his moral. He gives his facts and then leaves the reader to form the conclusion, to construct the moral himself. There is use made of the reader's ideation masses, if he has any.

As above, M. Roerich gives a law for apperceptive attention and also a number of rules. We have but a single law.

"In every moment of consciousness which is not under voluntary guidance the accuracy and the rapidity of the conscious states increase in proportion to the extent, variety and proper coordination of the associated ideas" (p. 151).

The following rules result:

"I. In order to get apperceptive attention it is not necessary that the presentation be new, provided it appear in a new form" (p. 152). Thus Phédre, Iphigenia, Orestes, Achilles, etc., are historical personages with whom all are familiar. But how well are they presented by Racine, Glück, Goethe?

"II. To facilitate apperception, the new presentation should resemble the acquired ideas, though it need not be identical with them" (p. 153).

"III. The new presentations should be connected with the old by a series of graded transitions, which result in successive stages of distinctness and clearness" (p. 154).

"IV. Between two culminating points in apperceptive attention there should be a period of deliberation and judgment" (p. 156). Such a period is necessary to allow of proper assimilation and ideal coordination. Time for rest and recuperation is also necessary to prevent fatigue.

The account given by M. Roerich is an excellent one. Though he does not bring out the motor aspects of attention, still he makes up for this by emphasizing its pragmatic aspects. Psychologists too often are like the people,

"— that dwell up in the steeple,

All alone,

And who, tolling, tolling, tolling,

In that muffled monotone,

Feel a glory in so rolling

On the human heart a stone."

It is refreshing when one comes out of his shell and applies his science to concrete situations, tests his theories by fitting them to the world about him. M. Roerich has made a creditable endeavor in this direction.

FELIX ARNOLD.

NEW YORK CITY.

JOURNALS AND NEW BOOKS

ZEITSCHRIFT FÜR PSYCHOLOGIE UND PHYSIOLOGIE DER SINNESORGANE. July, 1906, Band 42, Heft 2 u. 3. Abteilung für Psychologie. *Beiträge zur speziellen Psychologie auf Grund einer Massuntersuchung* (pp. 81-127): G. HEYMANS and E. WIERSMA. — Preliminary paper giving gross results of a questionnaire study of mental heredity in four hundred families. The questionnaire, sent to physicians of Holland, consisted of ninety questions relating to various mental traits. The results show uniformly mental heredity and that generally the inheritance is homosexual. In intellectual traits there are interesting variations in the dominance of maternal and paternal influence. *Studien über die experimentelle Beeinflussung des Vorstellungsverlaufs* (pp. 128-161): MAX LEVY-SUHL. — The problem of this investigation is to determine the nature of the reactions of the mentally diseased to word-stimuli interjected suddenly while the patients are talking and to determine whether there are characteristic reactions for the various forms of mental disease. Critique of association experiments with isolated words. The importance and rôle of the 'constellation.' *Die Verlegung diaskleral in das menschliche Auge einfallender Lichtreize in den Raum* (pp. 162-174): OTTO VERAGUTH. — If light is concentrated on the retina through the sclerotic on the temporal side of the eye, the light is perceived not only on the nasal side of the visual field, but also on the temporal side. Some individuals see a double light, a more intense one on the temporal side and a weaker one on the nasal side. The same individuals perceived only a single light with diascleral stimulation from the nasal side. Theoretical considerations suggested by the observations. *Eine Nachbilderscheinung* (pp. 175-178): A. PRANDTL. — Explanation of the illusion of direction produced by the bright after-image streak which follows the movement of the eye over a luminous object in a dark field. The rapidity of the eye-movement and the short duration of the after-image, which decreases rapidly from the luminous point where it is most intense to any other point, brings it about that as a matter of fact we see merely the after-image of the luminous point and it seems as if during the eye-movement or immediately after it the streak moved towards this point. *Literaturbericht.*

- Delvalve, Jean. *L'organization de la conscience morale*. Paris: Felix Alcan. 1906. Pp. 172. 2 fr. 50.
- Dietzgen. *The Positive Outcome of Philosophy*. Chicago: Chas. H. Kerr & Co. 1906. Pp. 444.
- Fitch, M. H. *The Physical Basis of Mind and Morals*. Chicago: Chas. H. Kerr & Co. 1906. Pp. 266.
- Gebhardt, Carl. *Spinozas Abhandlung über Verbesserung des Verstandes. Eine entwicklungsgeschichtliche Untersuchung*. Heidelberg: Winter. 1906. Pp. 117. 3 M.

- Hooper, Charles E. *The Anatomy of Knowledge*. An essay in objective logic. London: Watts & Co. 1906. Pp. 226. 3s. 6d.
- Montgomery, Edmund. *Philosophical Problems in the Light of Vital Organization*. New York and London: G. P. Putnam's Sons. 1907. Pp. 462. \$2.50.
- Paulhan, Fr. *Le mensonge de l'art*. Paris: Felix Alan. 1907. Pp. 380.
- Pfordten, Otto v. de. *Versuch einer Theorie von Urtheil und Begriff*. Heidelberg: Winter. 1906. Pp. 73. 2 M.
- Congress of Arts and Science, Universal Exposition, St. Louis, 1904*. Edited by Howard J. Rogers, A.M., LL.D., Director of Congresses. Vol. VIII. *Education, Religion*. Boston and New York: Houghton, Mifflin & Co. 1906. Pp. x + 493. \$2.50 net.

NOTES AND NEWS

In the untimely death of Professor Charles Edward Garman, of Amherst College, the philosophic community suffers a loss which it will be hard, if at all possible, to repair. Professor Garman's name has not figured largely in the journals, nor did he ever put his philosophy into book form; yet his influence has been and will continue to be great. A partial estimate of it can be made from the number of his former pupils who are now teaching philosophy or psychology; it appears that, in proportion to the size of the institution at which he taught, he has trained more professional students of these subjects than any other American professor. Such an estimate is still only partial, for, more than most teachers of philosophy, he made the subject very real to his students, so that those who have followed quite other lines of work still keep an interest in philosophy, and apply 'Garman's system' to the problems of their lives and of the times. They retain, to a remarkable degree, both the method—the standards of criticism—and the negative and positive results which were reached in his courses. He owed this success in part to the intense personal interest which he took in the progress of his students as individuals, to his insistence on independent thinking, and to his skill in adapting his method of presentation to the varying responsiveness met in different years. But his success as a teacher of philosophy was also due in large measure to the plain fact that he was not merely a teacher of philosophy; in a very true sense of the word, he was a philosopher. Philosophy was to him something vital, compelling, inspiring. Its history was not simply a record of technical achievement, but a growth in man's mastery of himself and of his conditions. How much of a stir in the philosophic world would have been created by the publication of Garman's philosophy, it is hard to guess. Perhaps the most striking feature of his positive doctrine was the view that, since consciousness gives us our only direct insight into reality, we have the right to take the essential characteristics of consciousness as fundamental to the

world at large; from which he reasoned that both intelligence and purpose were of the very essence of things.

R. S. WOODWORTH.

The *Missouri State Republican*, a weekly newspaper published in St. Louis, is printing in successive numbers extracts from 'A Mechanic's Diary,' by the late Governor H. C. Brokmeyer, of Missouri. He was one of the earnest and enthusiastic Germans who, after the revolution of 1848, so effectively transplanted the philosophy of Fichte and Hegel from its native soil to America, and who initiated the movement of which the *Journal of Speculative Philosophy*, under the worthy editorship of Dr. W. T. Harris, was for so long the exemplar. The diary contains, along with autobiographic material and shrewd comment upon business and political affairs, much that is of a directly philosophical nature. For example, in the issue of January 4 there is an extract, dating from 1856, in which the writer, after referring to his having entered upon his annual course in Hegel's 'Logic,' gives his own account of the problem and worth of that book. The series contains much of value both to the student of Hegel (and, incidentally, of Spinoza) and to the student of the fortunes of philosophy in America.

Professor Josiah Royce, of Harvard University, is giving a series of five lectures at the University of Illinois. His general subject is 'Loyalty as an Ethical Principle.' The special topics of the five lectures are: 'The Problem of Ethics'; 'Four Ideals of Personality'; 'Loyalty as a Personal and Social Ideal'; 'Loyalty as a Factor in American Life'; 'Personality and Immortality.'

Dodd, Mead and Company are to publish 'American Philosophy—The Early Schools,' by Professor I. Woodbridge Riley, who has collected his material from neglected books and unpublished manuscripts. Professor Riley regards Emerson as standing for the typical American philosophy, to which the early movements led up.

ON Monday evenings in February and March Professor Henry Edward Crampton, of Columbia University, will deliver a series of lectures upon 'The Doctrine of Evolution: its Basis and its Scope,' at Cooper Union.

WALTER SMITH, M.A. (Edinburgh), Ph.D. (Tübingen), professor of philosophy in Lake Forest College 1890-1905, died at Charlottesville, Virginia, January 10, 1907.

THE Reverend Charles Edward Hart, D.D., professor of ethics and evidences of Christianity at Rutgers College, has been made professor emeritus of ethics, after twenty-six years of service.

THE Southern Society for Philosophy and Psychology held its second meeting, in Montgomery, Alabama, December 27-29.

DR. HUGO MÜNSTERBERG, professor of psychology in Harvard University, has returned to Cambridge after a visit to Germany.

DR. FRANZ BOAS, of Columbia University, has been elected president of the American Anthropological Association.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

PRAGMATISM'S CONCEPTION OF TRUTH¹

WHEN Clerk-Maxwell was a child it is written that he had a mania for having everything explained to him, and that when people put him off with vague verbal accounts of any phenomenon he would interrupt them impatiently by saying, "Yes; but I want you to tell me the *particular go* of it!" Had his question been about truth, only a pragmatist could have told him the particular go of it. I believe that our contemporary pragmatists, especially Messrs. Schiller and Dewey, have given the only tenable account of this subject. It is a very ticklish subject, sending subtle rootlets into all kinds of crannies, and hard to treat in the sketchy way that alone befits a public lecture. But the Schiller-Dewey view of truth has been so ferociously attacked by rationalistic philosophers, and so abominably misunderstood, that here, if anywhere, is the point where a clear and simple statement should be made.

I fully expect to see the pragmatist view of truth run through the classic stages of a theory's career. First, you know, a new theory is attacked as absurd; then it is admitted to be true, but obvious and insignificant; finally it is seen to be so important that its adversaries claim that they themselves discovered it. Our doctrine of truth is at present in the first of these three stages, with symptoms of the second stage having begun in certain quarters. I wish that this lecture might help it beyond the first stage in the eyes of many of you.

Truth, as any dictionary will tell you, is a property of certain of our ideas. It means their 'agreement,' as falsity means their disagreement, with 'reality.' Pragmatists and intellectualists both accept this definition as a matter of course. They begin to quarrel only after the question is raised as to what may precisely be meant by the term 'agreement,' and what by the term 'reality,' when reality is taken as something for our ideas to agree with.

In answering these questions the pragmatists are more analytic

¹ The sixth of a course of eight lectures on 'Pragmatism' delivered at the Lowell Institute, Boston, November-December, 1906.

and painstaking, the intellectualists more offhand and irreflective. The popular notion is that a true idea must copy its reality. Like other popular views, this one follows the analogy of the most usual experience. Our true ideas of sensible things do indeed copy them. Shut your eyes and think of yonder clock on the wall, and you get just such a true picture or copy of its dial. But your idea of its 'works' (unless you are a clock-maker) is much less of a copy, yet it passes muster, for it in no way clashes with the reality. Even though it should shrink to the mere word 'works,' that word still serves you truly; and when you speak of the 'time-keeping function' of the clock, or of its spring's 'elasticity,' it is hard to see exactly what your ideas can copy.

You perceive that there is a problem here. Where our ideas can not copy definitely their object, what does agreement with that object mean? A Berkeleian idealist might say that they are true whenever they are what God means that we ought to think about that object. But transcendental idealism holds the copy-view all through. Its doctrine is that our ideas possess truth just in proportion as they approach to being copies of the absolute's eternal way of thinking.

These views, you see, invite pragmatistic discussion. But the great assumption of the intellectualists is that truth means essentially an inert static relation. When you've got your true idea of anything, there's an end of the matter. You're in possession; you *know*; you've fulfilled your thinking destiny. You are where you ought to be mentally; you have obeyed your categorical imperative; and nothing more need follow on that climax of your rational destiny. Epistemologically you are in equilibrium.

Pragmatism, on the other hand, asks its usual question. "Grant an idea or belief to be true," it says, "what concrete difference will its being true make in any one's actual life? How will the truth be realized? What experiences will be different from those which would obtain if the belief were false? What, in short, is the truth's cash value in experiential terms?"

The moment pragmatism asks this question, it sees the answer: *True ideas are those that we can validate, corroborate and verify. False ideas are those that we can not.* That is the practical difference it makes to us to have true ideas; that, therefore, is the meaning of truth, for it is all that truth is known as.

This thesis is what I have to defend. The truth of an idea is not a stagnant property inherent in it. Truth *happens* to an idea. It *becomes* true, is *made* true by events. Its verity is in fact an event, a process, the process, namely, of its verifying itself, its *verification*. Its validity is the process of its *valid-ation*.

This trivial-sounding thesis has results which it will take the rest of my hour to explain.

Let me begin by reminding you of the fact that the possession of true thoughts means everywhere the possession of invaluable instruments of action; and that our duty to gain truth, so far from being a blank command from out of the blue, or a 'stunt' self-imposed by our intellect, can account for itself by excellent practical reasons.

The importance to human life of having true beliefs about matters of fact is a thing too notorious. We live in a world of realities that can be infinitely useful or infinitely harmful. Ideas that tell us which of them to expect count as the true ideas in all this primary sphere of verification, and the pursuit of such ideas is a primary human duty. The possession of truth, so far from being here an end in itself, is only a preliminary means towards other vital satisfactions. If I am lost in the woods and starved, and find what looks like a cow-path, it is of the utmost importance that I should think of a human habitation at the end of it, for if I do so and follow it, I save myself. The true thought is useful here because the house which is its object is useful. The practical value of true ideas is thus primarily derived from the practical importance of their objects to us. Their objects are, indeed, not important at all times. I may on another occasion have no use for the house; and then my idea of it, however verifiable, will be practically irrelevant, and had better remain latent. Yet since almost any object may some day become temporarily important, the advantage of having a general stock of *extra* truths, of ideas that shall be true of merely possible situations, is obvious. We store such extra truths away in our memories, and with the overflow we fill our books of reference. Whenever such an extra truth becomes practically relevant to one of our emergencies, it passes from cold-storage to do work in the world, and our belief in it grows active. You can say of it then either that 'it is useful because it is true' or that 'it is true because it is useful.' Both these phrases mean exactly the same thing, namely, that here is an idea that gets fulfilled and can be verified. Truth is the name for what starts the verification-process, use is the name for what completes it. True ideas would never have been singled out as such, would never have acquired a class-name, least of all a name suggesting value, unless they had been useful from the outset.

From this simple cue pragmatism gets her general notion of truth as something essentially bound up with the way in which one moment in our experience may lead us towards other moments which it will be worth while to have been led to. Primarily, and on the common-sense level, the truth of a state of

mind means this function of *a leading that is worth while*. When a moment in our experience of any kind whatever inspires us with a thought that is true, that means that sooner or later we dip by that thought's guidance into the particulars of experience again and make advantageous connection with them. This is a vague enough statement, but I beg you to retain it, for it is essential.

Our experience meanwhile is all shot through with regularities. One bit of it can warn us to get ready for another bit, can 'intend' or be 'significant of' that remoter object. The object's advent is the significance's verification. Truth, in these cases, meaning nothing but eventual verification, is manifestly incompatible with waywardness on our part. Woe to him whose beliefs play fast and loose with the order which realities follow in his experience: They will lead him nowhere or else make false connections.

By 'realities' or 'objects' here, we mean either 'things' of common sense, sensibly present, or else common-sense relations, such as dates, places, distances, kinds, activities. Following our mental image of a house along the cow-path, we actually come to see the house; we get the image's full verification. Such simply verified leadings are certainly the originals and prototypes of the truth-process. Experience offers indeed other forms of truth-process, but they are all conceivable as primary verifications arrested, multiplied or substituted one for another.

Take, for instance, yonder object on the wall. You and I consider it to be a 'clock,' although no one of us has seen the hidden works that make it one. We let our notion pass for true without attempting to verify. If truth mean verification-process essentially, ought we then to call such unverified truths as this abortive? No, for they form the overwhelmingly large number of the truths we live by. Indirect as well as direct verifications pass muster. Where circumstantial evidence is sufficient, we can go without eye-witnessing. Just as we here assume Japan to exist without ever having been there, because it *works* to do so, everything we know conspiring with the belief, and nothing interfering, so we assume that thing to be a clock. We *use* it as a clock, regulating the length of our lecture by it. The verification of the assumption here means its leading to no frustration or contradiction. Verifiability of wheels and weights and pendulum is as good as verification. For one truth-process completed there are a million in our lives that function in this state of nascency. They turn us *towards* direct verification; lead us into the surroundings of the objects they envisage; and then, if everything runs on harmoniously, we are so sure that verification is possible that we omit it, and are usually justified by all that happens.

Truth lives, in fact, for the most part on a credit system. Our

thoughts and beliefs 'pass' so long as nothing challenges them, just as bank notes pass so long as nobody refuses them. But this all points to direct face-to-face verifications somewhere, without which the fabric of truth collapses like a financial system with no cash basis whatever. You accept my verification of one thing, I yours of another. We trade on each other's truth. Beliefs verified concretely by *somebody* are the posts of the whole superstructure.

Another great reason for waiving complete verification in the usual business of life is that all things exist in kinds and not singly. Our world is found once for all to have that peculiarity. So that when we have once directly verified our ideas about one specimen of a kind, we consider ourselves free to apply them to other specimens without verification. A mind that habitually discerns the kind of thing before it, and acts by the law of the kind immediately, without pausing to verify, will be a 'true' mind in ninety-nine out of a hundred emergencies, proved so by its conduct fitting everything it meets, and getting no refutation.

Indirectly or only potentially verifying processes may thus be true as well as full verification-processes. They work as true processes would work, give us the same advantages, and claim our recognition for the same reasons. All this on the common-sense level of matters of fact, which we are alone considering.

But matters of fact are not our only stock in trade. *Relations among ideas* form another sphere where true and false beliefs obtain, and here the beliefs are absolute, or unconditional. When they are true they bear the name either of definitions or of principles. It is either a principle or a definition that 1 and 1 make 2, that 2 and 1 make 3, and so on; that white differs less from gray than it does from black; that when the cause begins to act the effect also commences. Such propositions hold of all possible 'ones,' of all conceivable 'whites' and 'grays' and 'causes.' The objects here are mental objects. Their relations are obvious at a glance, and no sense-verification is necessary. Moreover, once true, always true, of those same mental objects. Truth here has an 'eternal' character. If you can find a concrete thing anywhere that is 'one' or 'white' or 'gray,' or an 'effect,' then your principles will everlastingly apply to it. The only risk is in the finding. It is but one more case of ascertaining the kind, and applying the law of its kind to the particular object. You are sure to get truth if you can but name the kind rightly, for your principles hold good of everything of that kind without exception. If they failed to obtain concretely, you would say that you had classed your objects wrongly.

In this realm of mental relations, truth again is an affair of leading. We pass from one abstract idea to another, framing in the

end great systems of logical and mathematical truth, under the respective terms of which the sensible facts of experience eventually arrange themselves, so that our eternal truths hold good of realities also. This marriage of fact and theory is endlessly useful. What we say is here already true in advance of special verification, if we have subsumed our objects rightly. Our ready-made ideal framework for all sorts of possible objects follows from the very structure of our thinking. We can no more play fast and loose with these abstract relations than we can do so with our sense-experiences. They coerce us; we must treat them consistently, whether or not we like the results. The rules of addition apply to our debts as rigorously as to our assets. The hundredth decimal of π is predetermined ideally now, though no one may have computed it. If we should ever need the figure in our dealings with an actual circle we should need to have it given rightly, calculated by the usual rules; for it is the same kind of truth that those rules elsewhere calculate.

Between the coercions of the sensible order and those of the ideal order, our mind is thus wedged tightly. Our ideas must agree with realities, be such realities concrete or abstract, be they facts or be they principles, under penalty of endless inconsistency and frustration.

So far, intellectualists can raise no protest. They can only say that we have barely touched the skin of the matter.

Realities mean, then, either concrete facts, or abstract kinds of things, and relations perceived intuitively between them. But what now does 'agreement' with such realities mean?—to quote again the definition of truth that is current.

Here it is that pragmatism and intellectualism begin to part company. Primarily, no doubt, to agree means to copy, but we saw that the mere word 'clock' would do instead of a mental picture of its works, and that of many realities our ideas can only be symbols and not copies. 'Past time,' 'power,' 'spontaneity,'—how can our mind copy such realities?

To 'agree' in the widest sense with a reality, *can only mean to be guided either straight up to it or into its surroundings, or to be put into such working touch with it as to handle either it or something connected with it better than if we disagreed.* Better either intellectually or practically! And often agreement will only mean the negative fact that nothing contradictory from the quarter of that reality comes to interfere with the way in which our ideas guide us elsewhere. To copy a reality is, indeed, one way of agreeing with it, but it is far from being essential. The essential thing is the process of being guided. Any idea that helps us to deal with

either the reality or its belongings, that doesn't entangle our progress in frustrations, that *fits*, in fact, and adapts our life to the reality's whole setting, will agree sufficiently to meet the requirement. It will hold true of that reality.

Thus, *names* are just as 'true' or 'false' as definite mental pictures are. They set up similar verification-processes, and lead to fully equivalent practical results.

All human thinking gets discursified; we exchange ideas; we lend and borrow verifications, get them from one another by means of social intercourse. All truth thus gets verbally built out, stored up, and made available for every one. Hence, we must *talk* consistently just as we must *think* consistently; for both in talk and thought we deal with kinds. Names are arbitrary, but once understood, they must be kept to. We mustn't now call Abel 'Cain' or Cain 'Abel.' If we do, we ungear ourselves from the book of Genesis, and from all its connections with the universe of speech and fact down to the present time. We throw ourselves out of whatever truth that whole system may embody.

The overwhelming majority of our true ideas admit of no direct or face-to-face verification—those of past history, for example, as of Cain and Abel. The stream of time can be remounted only verbally, or verified indirectly by the present prolongations or effects of what the past harbored. Yet if they agree with these verbalities and effects, we can know that our ideas of the past are true. *As true as past time itself was*, so true was Julius Cæsar, so true were antediluvian monsters, all in their proper dates and settings. That past time itself was, is guaranteed by its coherence with everything that's present. True as the present *is*, the past *was* also.

Agreement thus turns out to be essentially an affair of leading—leading that is useful because it is into quarters that contain objects that are important. True ideas lead us into useful verbal and conceptual quarters as well as directly up to useful sensible termini. They lead to consistency, stability and flowing human intercourse. They lead away from eccentricity and isolation, from foiled and barren thinking. The untrammelled flowing of the leading-process, its general freedom from clash and contradiction, passes for its indirect verification; but all roads lead to Rome, and in the end, and eventually, all true processes must lead to the face of directly verifying sensible experiences *somewhere*.

Such is the large loose way in which the pragmatist interprets the word agreement. He treats it altogether practically. He lets it cover any process of conduction from a present idea to a future terminus, provided only it run prosperously. It is only thus that 'scientific' ideas, flying as they do beyond common sense, can be said

to agree with their realities. It is *as if* reality were made of ether, atoms or electrons, but we mustn't think so literally. The term 'energy' doesn't even pretend to stand for anything 'objective.' It is only a way of measuring the surface of phenomena so as to *string* their changes on a simple formula.

Yet in the choice of these man-made formulas we can not be capricious any more than we can be capricious on the common-sense practical level. We must find a theory that will *work*; and that means something extremely difficult; for our theory must mediate between all previous truths and certain new experiences. It must derange common sense and previous belief as little as possible, and it must lead to some sensible terminus or other that can be verified exactly. To 'work' means both these things; and the squeeze is so tight that there is little loose play for any theory. They are wedged and controlled as nothing else is. Yet sometimes alternative theoretic formulas are equally compatible with all the truths we know, and then we choose between them for subjective reasons. We choose the kind of theory to which we are already partial; we follow 'elegance' or 'economy.' Clerk-Maxwell somewhere says it would be 'poor scientific taste' to choose the more complex of two equally well-evidenced conceptions; and you will all agree with him. Truth here is what gives us the maximum possible sum of satisfactions, taste included, but consistency both with previous truth and with novel fact is always the most imperious claimant.

I have led you through a very sandy desert. But now, if I may be allowed so vulgar an expression, we begin to taste the milk in the cocoanut. Our rationalist critics here discharge their batteries upon us, and to reply to them will take us out from all this dryness into full sight of a momentous philosophical alternative.

Our account of truth is an account of truths in the plural, of processes of leading, realized *in rebus*, and having only this quality in common, that they *pay*. They pay by guiding us into or towards some part of a system that dips at numerous points into sense-percepts, which we may copy mentally or not, but with which at any rate we are now in the kind of commerce vaguely designated as verification. Truth for us is simply a collective name for verification-processes, just as health, wealth, strength, etc., are names for other processes connected with life, and also pursued because it pays to pursue them. Truth is *made*, just as health, wealth and strength are made, in the course of experience.

Here rationalism is instantaneously up in arms against us. I can imagine a rationalist to talk as follows:

"Truth is not made," he will say; "it absolutely obtains, being

a unique relation that does not wait upon any process, but shoots straight over the head of experience, and hits its reality every time. Our belief that yon thing on the wall is a clock is true already, although no one in the whole history of the world should verify it. The abstract quality of standing in that transcendent relation is what makes any thought true that possesses it, whether or not there be verification. You pragmatists put the cart before the horse in making truth's being reside in verification-processes. These are merely signs of its being, merely our lame ways of ascertaining, after the fact, which of our ideas already has possessed the wondrous quality. The quality itself is timeless, like all essences and natures. Thoughts partake of it directly, as they partake of falsity or of irrelevancy. It can't be analyzed away into pragmatic consequences."

The whole plausibility of this rationalist tirade is due to the fact to which we have already paid so much attention. In our world, namely, abounding as it does in things of similar kinds and similarly associated, one verification serves for others of its kind, and one great use of knowing things is to be led not so much to them as to their associates, especially to human talk about them. The quality of truth, obtaining *ante rem*, pragmatically means, then, the fact that in such a world innumerable ideas work better by their indirect or possible than by their direct and actual verification. Truth *ante rem* means only verifiability, then; or else it is a case of the stock rationalist delusion of treating the *name* of a concrete phenomenal reality as an independent metaphysical entity, and placing it behind the reality as its explanation. Professor Mach quotes somewhere an epigram of Lessing's:

Sagt Hänschen Schlau zu Vetter Fritz,
 "Wie kommt es, Vetter Fritzen,
 Dass grad' die reichsten in 'der Welt,
 Das meiste Geld besitzen?"

Hänschen Schlau here treats the principle 'wealth' as something distinct from the facts denoted by the man's being rich. It antedates them; the facts become only a sort of secondary coincidence with the rich man's essential nature.

In the case of 'wealth' we all see the fallacy. We know that wealth is but a name for concrete processes that certain men's lives play a part in, and not a natural excellence found in Messrs. Rockefeller and Carnegie, but not in the rest of us.

Like wealth, health also lives *in rebus*. It is a name for processes, as digestion, circulation, sleep, etc., that go on happily, though in this instance we are more inclined to think of it as a principle and say the man digests and sleeps so well because he is so healthy.

With 'strength' we are, I think, more rationalistic still, decidedly inclined to treat it as an excellence preëxisting in the man and explanatory of the hereulean performances of his muscles.

With 'truth' most people go over the border entirely, and treat the rationalistic account as self-evident. But really all these words in *th* are exactly similar. Truth exists *ante rem* just as much and as little as the other things do.

The scholastics made much of the distinction between habit and act. Health *in actu* means, among other things, good sleeping and digesting. But a healthy man need not always be sleeping, or always digesting, any more than a wealthy man need be always handling money, or a strong man always lifting weights. All such qualities sink to the status of 'habits' between their times of exercise; and similarly truth becomes a habit of certain of our ideas and beliefs in their intervals of rest from verifying activity. But that activity is the root of the whole matter, and the condition of there being any habit to exist in the intervals.

'The true,' to put it very briefly, is only the expedient in the way of our thinking, just as 'the right' is only the expedient in the way of our behaving. Expedient in almost any fashion; and expedient in the long run and on the whole, of course; for what meets expediently all the experience in sight won't necessarily meet all farther experiences equally satisfactorily. Experience, as we know, has ways of *boiling over*, and making us correct our present formulas.

The 'absolutely' true, meaning what no further experience will ever alter, is that ideal vanishing-point towards which we imagine that all our temporary truths will some day converge. It runs on all fours with the perfectly wise man, and with the absolutely complete experience; and, like these other ideals, it may never fully eventuate or materialize. We have to live to-day by what truth we can get to-day, and be ready to-morrow to call it falsehood. Ptolemaic astronomy, Euclidean space, Aristotelian logic, scholastic metaphysics, were expedient for centuries, but human experience has boiled over those limits, and we now call these things only relatively true, or true within those borders of experience. 'Absolutely' they are false; for we know that those limits were casual, and might have been transcended by past theorists just as they are by present thinkers.

When new experiences lead to retrospective judgments, using the past tense, what these judgments utter *was* true, even though no past thinker had been led there. We live forwards, a Danish thinker has said, but we understand backwards. The present sheds a backward light on the world's previous processes. They may have

been truth-processes for the actors in them. They are not so for one who knows the later revelations of the story.

This regulative notion of a potential better truth to be established later, possibly to be established some day absolutely, and having powers of retroactive legislation, turns its face, like all pragmatist notions, towards concreteness of fact and towards the future. Like the half-truths, the absolute truth will have to be *made*, made as a relation incidental to the growth of a mass of verification-experience, to which the half-true ideas are all along contributing their quota.

I have already insisted on the fact that truth is made largely out of previous truths. Men's beliefs at any time are so much experience *funded*. But they are themselves parts of the sum total of the world's experience, and become matter, therefore, for the next day's funding operations. So far as reality means experienceable reality, both it and the truths men gain about it are everlastingly in process of mutation—mutation towards a definite goal, it may be—but still mutation.

Mathematicians can solve problems with two variables. On the Newtonian theory, for instance, acceleration varies with distance, but distance also varies with acceleration. In the realm of truth-processes facts come independently and determine our beliefs provisionally. But these beliefs make us act, and as fast as they do so, they bring new facts into sight which redetermine the beliefs accordingly. So the whole coil and ball of truth, as it rolls up, is the product of a double influence. Truths emerge from facts; but they dip forward into facts again and add to them; which facts again create or reveal new truth (the word is indifferent) and so on *ad infinitum*. The facts themselves meanwhile are not true. They simply *are*. Truth is the function of beliefs that start and terminate among them.

The case is like a snowball's growth, due, as it is, to the distribution of the snow on the one hand, and to the direction of the boy's successive pushes on the other, with these factors codetermining each other incessantly.

The most fateful point of difference between being a rationalist and being a pragmatist is now fully in sight. Experience is in mutation, and our psychological ascertainments of truth are in mutation—so much rationalism will allow; but never that either reality itself or truth itself is mutable. Reality stands complete and ready-made from all eternity, rationalism insists, and the agreement of our ideas with it is that unique and timeless virtue in them of which she has already told us. As that intrinsic excellence, their truth has

nothing to do with our experiences. It adds nothing to the content of experience. It makes no difference to reality itself; it is supervenient, inert, static, a reflection merely. It doesn't *exist*, it *holds* or *obtains*; it belongs to another dimension from that of facts and fact-relations, belongs, in short, to the epistemological dimension—and with that big word rationalism closes the discussion.

Thus, just as pragmatism faces forward to the future, so does rationalism here again face backward to a past eternity. True to her inveterate habit, rationalism reverts to 'principles,' and thinks that when an abstraction once is named, we own a solution.

The tremendous pregnancy in the way of consequences for life of this radical difference of outlook will only become apparent in my later lectures. I wish meanwhile to close this lecture by showing that rationalism's sublimity does not save it from inanity.

When, namely, you ask rationalists, instead of accusing pragmatism of desecrating the notion of truth, to define it themselves by saying exactly what *they* understand by it, the only positive attempts I can think of are these two:

1. "Truth is the system of propositions which have an unconditional claim to be recognized as valid."²
2. Truth is a name for all those judgments which we find ourselves under obligation to make by a kind of imperative duty.³

The first thing that strikes one in such definitions is their unutterable triviality. They are absolutely true, of course, but absolutely insignificant until you handle them pragmatically. What do you mean by 'claim' here, and what do you mean by 'duty'? As summary names for the concrete reasons why thinking in true ways is overwhelmingly expedient and good for mortal men, it is all right to talk of claims on reality's part to be agreed with, and of obligations on our part to agree. We feel both the claims and the obligations, and we feel them for just those reasons.

But the rationalists who talk of claim and obligation expressly say that they have nothing to do with our practical interests or personal reasons. Our reasons for agreeing are psychological facts, they say, relative to each thinker, and to the accidents of his life. They are his evidence merely, they are no part of the life of truth itself. That life transacts itself in a purely logical or epistemological, as distinguished from a psychological, dimension, and its claims antedate and exceed all personal motivations whatsoever. Though neither man nor God should ever *ascertain* truth, the word would still have to be defined as that which *ought* to be ascertained and recognized.

² A. E. Taylor, *Philosophical Review*, Vol. XIV., p. 238.

³ H. Rickert, 'Der Gegenstand der Erkenntnis,' chapter on 'Die Urtheilsothwendigkeit.'

There never was a more exquisite example of an idea abstracted from the concretes of experience and then used to oppose and negate what it was abstracted from.

Philosophy and common life abound in similar instances. The 'sentimentalist fallacy' is to shed tears over abstract justice and generosity, beauty, etc., and never to know these qualities when you meet them in the street, because the circumstances make them vulgar. Thus I read in the privately printed biography of an eminently rationalistic mind: "It was strange that with such admiration for beauty in the abstract, my brother had no enthusiasm for fine architecture, for beautiful painting, or for flowers." And in almost the last philosophic work I have read, I find such passages as the following: "Justice is ideal, solely ideal. Reason conceives that it ought to exist, but experience shows that it can not. . . . Truth, which ought to be, can not be. . . . Reason is deformed by experience. As soon as reason enters experience, it becomes contrary to reason."

The rationalist's fallacy here is exactly like the sentimentalist's. Both extract a quality from the muddy particulars of experience, and find it so pure when extracted that they contrast it with each and all its muddy instances as an opposite and higher nature. All the while it is *their* nature. It is the nature of truths to be validated, verified. It pays for our ideas to be validated. Our obligation to seek truth is part of our general obligation to do what pays. The payments true ideas bring are the sole *why* of our duty to follow them. Identical whys exist in the case of wealth and health.

Truth makes no other kind of claim and imposes no other kind of ought than health and wealth do. All these claims are conditional; the concrete benefits we gain are what we mean by calling the pursuit a duty. In the case of truth, untrue beliefs work as perniciously in the long run as true beliefs work beneficially. Talking abstractly, the quality 'true' may thus be said to grow absolutely precious, and the quality 'untrue' absolutely damnable. The one may be called good, the other bad, unconditionally. We ought to think the true, we ought to shun the false, imperatively.

But if we treat all this abstraction literally and oppose it to its mother soil in experience, see what a preposterous position we work ourselves into.

We can not then take a step forward in our actual thinking. When shall I acknowledge this truth and when that? Shall the acknowledgment be loud?—or silent? If sometimes loud, sometimes silent, which *now*? When may a truth go into cold-storage in the encyclopedia? and when shall it come out for battle? Must I constantly be repeating the truth 'twice two are four' because of its

eternal claim on recognition? or is it sometimes irrelevant? Must my thoughts dwell night and day on my personal sins and blemishes, because I truly have them?—or may I sink and ignore them in order to be a decent social unit, and not a mass of morbid melancholy and apology?

It is quite evident that our obligation to acknowledge truth, so far from being unconditional, is tremendously conditioned. Truth, with a big T, and in the singular, claims abstractly to be recognized, of course; but concrete truths in the plural need be recognized only when their recognition is expedient. A truth must always be preferred to a falsehood when both relate to the situation; but when neither does, truth is as little of a duty as falsehood. If you ask me what o'clock it is and I tell you that I live at 95 Irving Street, my answer may indeed be true, but you don't see why it is my duty to give it. A false address would be as much to the purpose.

With this admission that there are conditions that limit the application of the abstract imperative, the pragmatistic treatment of truth sweeps back upon us in its fullness. Our duty to agree with reality is seen to be grounded in a perfect jungle of concrete expediencies.

When Berkeley had explained what people meant by matter, people thought that he denied matter's existence. When Messrs. Schiller and Dewey now explain what people mean by truth, they are accused of denying *its* existence. These pragmatists destroy all objective standards, critics say, and put foolishness and wisdom on one level. A favorite formula for describing Mr. Schiller's doctrines and mine is that we are persons who think that by saying whatever you find it pleasant to say and calling it truth you fulfill every pragmatistic requirement.

I leave it to you to judge whether this be not an impudent slander. Pent in, as the pragmatist, more than any one else, sees himself to be, between the whole body of funded truths squeezed from the past, and the coercions of the world of sense about him, who so well as he feels the immense pressure of objective control under which our minds perform their operations? We have heard much of late of the uses of the imagination in science. It is high time to urge the use of a little imagination in philosophy. The unwillingness of some of our critics to read any but the silliest and stupidest of possible meanings into our statements is as discreditable to their imaginations as anything I know in recent philosophic history. Schiller says the true is that which 'works.' Thereupon he is treated as one who limits verification to the lowest material utilities. Dewey says truth is what gives 'satisfaction.' He is treated

as one who believes in calling everything true which, if it were true, would be pleasant.

Our critics certainly need more imagination of realities. I have honestly tried to stretch my own imagination and to read the best possible meaning into the rationalist conception, but I have to confess that it still completely baffles me. The notion of a reality calling on us to 'agree' with it, and that for no reasons, but simply because its claim is 'unconditional' or 'transcendent,' is one that I can make neither head nor tail of. I try to imagine myself as the sole reality in the world, and then to imagine what more I would 'claim' if I were allowed to. When you suggest the possibility of my claiming that a mind should come into being from out of the void inane and stand and copy me, I can indeed imagine what the copying might mean, but I can conjure up no motive. What good it would do me to be copied, or what good it would do that mind to copy me, if practical consequences are expressly and in principle ruled out as motives for the claim (as they are by our rationalist authorities) I can not fathom. And when we get beyond copying, and fall back on unnamed forms of agreeing that are expressly denied to be either copyings or leadings or fittings, or any other processes pragmatically definable, the *what* of the 'agreement' claimed becomes as unintelligible as the *why* of it. Neither content nor motive can be imagined for it. It is an absolutely meaningless abstraction.⁴

Surely in this field of truth it is the pragmatists and not the rationalists who are the more genuine defenders of the universe's rationality.

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THE CLASSIFICATION OF THE VIRTUES

A FRENCH moralist¹ wrote recently, deploring the lack of agreement among teachers of ethics in French universities, saying that their differences of opinion furnished capital for the enemies of philosophy in ecclesiastical circles. He then detailed a list of ten

⁴ I am not forgetting that Professor Rickert long ago gave up the notion of truth being founded on agreement with reality. Reality, according to him, is whatever agrees with truth, and truth is founded solely on our primal duty. This fantastic flight, together with Mr. Joachim's candid confession of failure in his book 'The Nature of Truth,' seem to me to mark the bankruptcy of rationalism when dealing with this subject. Naturally I could not, in a popular lecture, pursue my subject into such intricacies.

¹ Lalande, 'Les principes universels de l'éducation morale,' *Revue de Métaphysique*, Vol. 9, p. 237.

virtues and maintained that these at least were generally recognized by moralists as essential to good conduct. Many such catalogues of virtues have been made since the time of Plato. But none has gained universal acceptance. Consequently there is at present a wide-spread conviction among students of ethics that all such attempts are doomed to failure. Nevertheless, a classification of fundamental virtues to which all moralists could agree, is a thing greatly to be desired. Hence it is worth while to inquire whether previous failures in this line may not be due as much to defects of method as to inherent difficulties of the problem.

Attempts to classify the virtues have generally been conducted in this way. Certain types of action are recognized as virtuous. These are examined and compared. Points of similarity are noted by which several virtues are associated together and at the same time set off from other virtues which do not possess these qualities. One of these aspects in which groups of virtues differ is selected as a convenient principle of classification. Thus the object of reference of a virtue is often chosen as a handy means of classifying it. Certain virtues are distinguished as alike self-regarding, as prudence and temperance; others are said to be social in their reference, as justice and sympathy. Or, the faculties which they bring into play may be hit upon as a principle for dividing the 'virtues. We then have intellectual virtues, like tolerance and sincerity; virtues of the will, as courage and self-control; and those of the affections, as kindness, loyalty, etc.

An excellent illustration of this way of treating the virtues is furnished by the classification of Thomas Aquinas, the accepted philosopher of the Catholic church. Thomas first divides the virtues, according to their source, into natural and supernatural. The supernatural virtues, *faith*, *hope* and *charity*, are produced in man by God. The natural virtues man acquires by an exercise of his own powers. They, in their turn, are divided, according to their source in human nature, into intellectual and moral virtues. The moral virtues are four, *justice*, *prudence*, *courage* and *temperance*. In classifying these four, Thomas uses another principle and distinguishes them according to the object of their reference. Thus *justice*, because it refers to the good of others, is separated from *prudence*, *courage* and *temperance*, which are concerned with the welfare of self.

Such a method of classification has grave faults. It is bound to lead to results largely subjective, because the principle used depends upon individual taste and opinion. The same virtue may belong to any one of an indefinite number of groups, according to the quality or aspect of it chosen for emphasis. Thus tolerance may be classed

with sincerity as an intellectual, or with justice as a social, virtue, according as we emphasize its source in the individual nature, or the end toward which it is directed. Then, too, a principle of classification so selected for convenience's sake affords no test of the fitness of any activity to be admitted to the system of virtues. Suppose we classify the virtues according to the object of their reference. Then any practise designed to promote the welfare of self, *e. g.*, cunning, might be included among the self-regarding virtues. At least the principle of classification would furnish no obstacle. But these and many other shortcomings of this method of classification have their roots in one fundamental defect,—a principle is employed in classification which is not organic to the field of its application. Hence it follows inevitably that the results obtained are subjective, and room is left for endless doubt and dispute. No necessity attaches to the conclusions because the essential interrelation of the facts is not observed.

The biological sciences have long since abandoned a method of classification whose results are so unsatisfactory. Before the time of Darwin, however, plants and animals were classified in this fashion. The naturalists of the eighteenth century based their classifications for the most part upon broad and easily discovered resemblances in the external characters of organisms. Such similarities in structure and habit as seemed important to the individual investigator were utilized by him in the grouping of forms. None of the systems thus constructed gained universal acceptance; for all were subjective, and hence artificial. But the advent of evolution changed all this, and put into the hands of the biologist a new and better instrument for the organization of his field. The relation of descent was seen to constitute the natural principle of classification. Living forms which are grouped genetically are not arbitrarily associated by an external tie and a common label; they are organically united by community of descent and consequent identity of nature. By their phylogenetic affinities the various living forms are grouped into an organic system, between the members of which there is essential interrelation and functional interdependence.

We now ask, can we make such a classification of the virtues, a classification based not on external resemblances, but on organic interconnection? Can we apply the organic conception to the moral life, and conceive of the virtues as functions, whose nature and position are determined by the part they play in the realization of the moral ideal? I believe that we can if we understand the moral life as a development whose end is the complete organization of human conduct, and the different virtues as the necessary steps in this process of organization.

That moral development should take the form of a progressive organization is a consequence of the nature of intelligent personality. All moralists at present agree that the good is the realization of the whole self. Since moral development has this end, it is plain that its general direction is prescribed by the nature of the self whose capacities it must realize. If, then, we are to discover the direction of development in morality, we must gain a clear conception of the 'whole self,' the person in his unity. Such a conception can not be obtained by structural analysis. For the self, conceived thus statically, is resolved into a combination of elements,—sensations, feelings, etc. We must rather take the dynamic point of view and ask concerning the function of personality. How does it act? What does it achieve?

The self, viewed thus dynamically, appears as the expression of a single activity, will. For all intelligent action, the whole sphere of conduct, has its source in volition. In fact, will in the larger sense is just consciousness active. Now, an examination of this, the central activity of personality, shows it to be essentially an instrument of organization and assimilation. Our own consciousness testifies to the fact that such is the function of volition in our personal life. We know that our wills are constantly selecting new objects and integrating them into the unity of our experience. Human history furnishes additional testimony to the same effect. In the evolution of man intelligently directed volition has played a leading part, always as an activity of adjustment and organization. Through conscious effort man has adjusted himself to the objects of his environment, and has incorporated them within the widening circle of his personality.

Thus the facts of experience prove beyond a doubt that will is, in its essential character, an organizing agency. Hence it can find entire satisfaction only in a completely organized conduct. Furthermore, since volition is personality active, such a complete organization of conduct is required to fully realize the self. And finally, since self-realization is the end of moral development, the conclusion follows that this development must be in its direction a growing organization.

Therefore, let us admit that moral development must always take the form of a progressive organization of conduct because the activity of intelligent volition common to all individuals demands it. Still, the manner in which this organization is accomplished will depend upon the conditions and circumstances of individual life,—upon disposition, occupation, race, time, etc. Hence the different activities required for its successful achievement will vary with each age, each nation and each person. How then can we hope to dis-

tinguish certain actions as virtuous because necessary in every case for the complete organization of conduct?

It is, of course, true that the conditions of human life differ widely and are undergoing constant change. But a glance at the facts of moral experience shows that there are, nevertheless, a few fundamental conditions of life the same for all human beings. All men as members of the human species have natural instincts and impulses in general the same because springing from a physical constitution common to all. All men as intelligent persons sustain certain social relations because consciousness of self involves consciousness of others in a community of intelligence. Lastly, all men as real beings are elements, however insignificant, in universal reality. These conditions identical for all individuals require from all certain definite adjustments if they are to completely organize their conduct. For instance, every man if he is to attain the ideal of an organized life, must coordinate his various conflicting impulses and must adjust his narrower personal interest to the larger good of society. These activities, required of all, are necessary steps or functions in moral development, and deserve to be ranked as virtues.

A completely organized conduct involves for man the following activities as its necessary functions. First, that activity by which the different conflicting impulses in the self are adjusted into an orderly whole and thus a coherent individuality is created. This activity includes, negatively, in the repression of the parts, *temperance*, and positively, in the assertion of the whole, *prudence*. Secondly, that activity whereby the definite individuality just emerged is integrated into the social system. The activity in question includes in its two aspects *justice* and *benevolence*. Finally, some adjustment of the self, whose nature is thus broadened to include the lives of fellow men, to universal reality. This activity is more an affair of religion than morality, and is as yet with human beings so much a blind groping and so little a successful achievement that it is not surprising that its two aspects are not distinguished by familiar names,—although *reverence* and *faith* suggest themselves to the mind.

Pursuing this method we reach, I believe, a satisfactory classification of the virtues. It resembles the classification of living forms made by the biologist. Like this, it is a natural arrangement because based on genetic relationship and functional interdependence. As the various species of plants and animals are regarded as stages in the evolution of the living organism, so the different virtues are conceived as steps in the evolution of conduct. As the many living species are united by genetic affinities in one great organic system, so the different virtues are united in the complete organization of

conduct. As the species are classified according to the part they play in the process of organic evolution, so the virtues are classified according to the office they discharge in the organization of conduct. Thus our ideal of a principle of classification organic to the field of its application is realized. The virtues are classified within the system by the function which they discharge in its organization. Temperance and prudence are associated because both are required in the organization of individuality. Justice and benevolence are distinguished from them and classed together because necessary for the adjustment of the individual to society. Finally, it may be noticed that here the principle used in classification is itself a test of the fitness of any activity to be admitted to the system. For it is only through the function it discharges in the organization of conduct that an activity can be classed among the virtues.

The agreement of the classification here proposed with modern evolutionary conceptions is brought out clearly if we compare it with that made by Thomas Aquinas and adopted by Roman Catholic moralists. Indeed, the classification here given is related to that of Thomas much as modern genetic systems in biology are related to those of pre-Darwinian naturalists. Thus Thomas separates absolutely the supernatural from the natural virtues. The former are gifts of God; the latter have natural causes. In an analogous way pre-Darwinian science separated man from the other animal species, believing that the peculiar circumstances of his creation had given him a unique place in the organic realm. We have recognized no such difference in kind between the 'religious' and other virtues. All are stages in one process of organization, the religious virtues representing simply the final step in which the individual adjusts himself to universal reality. In like manner, of course, modern science admits no absolute separation between the human and other species. In his detailed classification of the natural virtues Thomas makes sharp distinctions upon the basis of single features chosen as principles of division, thus separating the intellectual from the moral virtues according to the faculties they bring into play, rational or appetitive, and among the moral virtues distinguishing two classes according to the object of their reference, social or selfish. All this reminds us of eighteenth-century classifications in biology by means of parts and attributes singled out by the systematist because serviceable to his purpose. On the other hand, the arrangement suggested above agrees with modern evolutionary systems in allowing no arbitrary distinction of forms, but classifying them all according to their genetic affinities in one process of development.

H. W. WRIGHT.

REVIEWS AND ABSTRACTS OF LITERATURE

Science and Idealism. HUGO MÜNSTERBERG. Boston and New York: Houghton, Mifflin & Co. 1906. Pp. vi + 71.

This little book is remarkable in that it presents in clear and simple outline a system of transcendental philosophy that is admittedly both abstruse and elaborate.

The author begins with a brief account of the achievement of science in 'transforming the world into a gigantic mechanism . . . in which no room is left for ideals and eternal duties' (p. 6). In view of this complete mechanization of all facts the question naturally arises as to whether there is 'anything in this world which is really valuable in itself, anything which justifies the idealistic belief in absolute values' (p. 7). The answer is, "Nature, material and mental, knows no values. Yet it is evident that this alone does not mean that there are no values in reality, for it would be absurd to think that the system of objects which we call nature is the whole world of our life experience. The fact that in physics and psychology a deliberate description and explanation of nature is going on—does this not in itself involve the existence of an acting personality which, as such, can find no place in the system of nature?" (p. 13). To the author, as to most of the post-Kantian idealists, it appears axiomatic that the mere fact of knowledge itself implies (1) that the knowers stand in a realm entirely different from the realm of known objects, and (2) that these known objects which constitute nature presuppose the knowers, have no existence apart from them, and function merely as passive creatures and instruments whereby the ends of the knowers are formulated and realized.

The ordinary or realistic theory of knowledge being sufficiently disposed of by a dignified assertion of its falsity, the author proceeds next to argue against the empirical or pluralistic form of idealism. The pragmatists, who are the holders of this doctrine, admit with the author the dependent and instrumental status of nature, and recognize the realm of persons and values as a realm which nature presupposes, but they wrongly conceive of persons as being temporal, finite and subject to evolution, and of personal values as being relative and shifting. This pragmatic standpoint 'spreads among our academic youth like a contagious disease; its first symptom being an eruption of epigrammatic cleverness' (p. 29). The pragmatist should understand that 'the structure of the world must be ultimately dependent on that in our consciousness which is common to all who have the world in common, and thus on a timeless general consciousness which comprehends only the conditions under which experience is possible at all' (p. 34).

Having differentiated monistic idealism from the pragmatic or pluralistic kind, it remains only to warn the reader against interpreting absolutism in terms exclusively intellectualistic. "By a fundamental act of our over-individual personalities, we transcend the chaos: we become intelligent subjects by creating the idea of a world which is common to us. . . . To make a world out of our experience means, and can not mean anything else than, to apperceive every bit of the chaos as something which

must will to be itself. But the will to be itself must lead to different demands, and each of these demands thus introduces a special group of values into the world, eternally given with its deepest ultimate structure. To be itself may mean, firstly, that our bit of experience is to be preserved, is to last through ever new experiences and is to be found again and again. The satisfaction of this demand gives us the values of truth. But to be itself may mean, further, that our bit of life experience is to stand for itself, complete in itself, independent of everything beyond it. The satisfaction of this desire gives to the world the eternal values of harmony and beauty. Thirdly, to be itself may also mean that our bit of experience demands a completion which it has not yet reached, and which it aims thus to secure. The satisfaction of this demand gives to the world the values of progress and law and morality. And, finally, to be itself means to be ultimately without inner contradiction, to be a unity . . . the ultimate demand that all the values become one . . . and the satisfaction of this demand brings us the values of religion and philosophy; . . . the logical, the esthetical, the ethical and the metaphysical values are independent of every personal preference, and thus belong eternally to the ultimate nature of the world, because they are simply the four necessary forms of the one demand, without which, reality would be an individual dream and never a common world" (pp. 38-41).

The remainder of the essay consists in an ingenious analysis and subdivision of these four groups of ideals, which the author believes to be eternally real and hence beyond the reach of the eventualities of science, present or to come.

Whatever may be thought of the truth of Professor Münsterberg's system, one must admire the honesty and fearlessness of an author who refrains from the usual attempt to conceal or suppress the paradoxical elements of his doctrine. The neo-Fichtean belief in the self as creator of the form and substance of the universe is a belief that is always put forward by Professor Münsterberg as the corner-stone of his system. May it not be that the prominence given to this one point has kept certain other points in his philosophy from getting their due share of discussion? Professor Münsterberg's philosophical system seems, indeed, to rest upon four fundamental postulates which might be expressed as follows: (1) The materialistic or mechanical method is the only sound or fruitful method for science to adopt. (2) The mechanical ideal of natural science is incompatible with the realization in the world of nature of any religious or spiritual ideals. (3) The religious consciousness when rightly interpreted does not demand fulfillment in the world of existence, but rather in a world of eternal realities to which science can never apply. (4) The world with which science deals is a creation of the ego in its over-individual and timeless aspect. Now if we leave out the last of these basal postulates, but retain the first three, we have a view that is of great intrinsic interest and one that is, I believe, destined to play an increasingly prominent part in philosophy. It is, in fact, the view of Professor Santayana, as set forth in 'The Life of Reason.' It appeals to all who, like Münsterberg and Santayana, have implicit faith in the mechanical

method of interpreting nature and who regard that method as in hopeless conflict with our spiritual needs as ordinarily interpreted, but who nevertheless believe that the realm of spiritual values suffices for itself, and that the truth of a religion, like the truth of a poem, suffers only indignity if treated as a truth about nature. And there are many others who, not attaining this last insight, have felt compelled in giving up the existential truth of religion to abandon it altogether. These latter would doubtless be grateful enough if they could be instructed how to get back their religious ideals by adopting a purely symbolic interpretation of them. If this is a fair account of the situation, it seems something of a pity that Professor Münsterberg should bar the door to his philosophy with what is, to put it mildly, a very formidable epistemological contrivance. Would the real significance of his metaphysics be seriously impaired if, like Mr. Santayana, he were content to depict the world of existence as the world of Democritus, in the blind flux of which, however, are perpetually reflected the eternal ideas of Plato—ideals and values which, though impotent to direct the course of things, are potent to glorify and illumine it? Then, if the picture were felt to be too somber, there would still be time to invoke the Kantian and Fichtean epistemology and, by a mystical *tour de force*, 'deduce' the world of nature from the over-individual postulating activity of its inhabitants. I do not believe that the subjectivistic theory itself, if thus postponed, would appeal less strongly to the choice spirits who can understand it, while I feel sure that such a rearrangement would make the system as a whole much more plausible and attractive to the common person.

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Deutsche Skeptiker: Lichtenberg-Nietzsche. Zur Psychologie des neueren Individualismus. ROBERT SAITSCHICK. Berlin: Ernst Hofmann & Co. 1906. Pp. 239.

Französische Skeptiker: Voltaire-Mérimée-Renan. Zur Psychologie des neueren Individualismus. ROBERT SAITSCHICK. Berlin: Ernst Hofmann & Co. Pp. 304.

In these two interesting volumes the author has put into a popular form the philosophic systems, or, more properly, the unsystematic philosophies of five thinkers,—Lichtenberg, Nietzsche, Voltaire, Mérimée and Renan. Experts in philosophy will not find here much that is original or suggestive. Dr. Saitschick has attempted little or no critical and constructive work. Throughout the two volumes his main purpose is to interpret the doctrines of the men about whom he has written, and in this aim he has succeeded admirably. His discussions are lucid and accurate expositions.

Students in the history of philosophy will find serious objections to the author's classifying all of these five thinkers as skeptics. Skepticism becomes attenuated to a meaningless term when we make it include such divergent doctrines. All of these men are, to be sure, 'doubting philos-

ophers,' but the objects about which they are skeptical are various. For example, Lichtenberg was an uncompromising atheist, while Voltaire was a pronounced deist. As the author rightly contends, it is Voltaire's almost fanatical hostility to Christianity that has led many to class him among the atheists. Then, too, Nietzsche is no skeptic, at least not in the sense in which Pyrrho, the father of skepticism, employed the word. We have nowhere among these five thinkers any consistent suspending of judgment about the nature of fundamental reality. They are all of them very positive that nothing can be known about the ultimate constitution of the universe. The term agnostic, or positivist, would more nearly fit them all. Again, the subtitle, 'For the Psychology of the Later Individualism,' is inapt. One could apply the term individualism to the philosophy of Spinoza or Plotinus as appropriately as to that of Nietzsche or Mérimée.

The author says of Lichtenberg: "He is no systematic thinker: he did not deduce his doctrines from certain fundamental postulates by a rigid logic." This same confession, in a slightly different form, he is obliged to make of the others, with the exception of Nietzsche. Their philosophic doctrines in the end are found to be merely collections of aphorisms, brilliant and subtle at times, but just as frequently illogical and shallow. Of the five, Nietzsche is easily the greatest philosopher; and the reader is disappointed that the author did not follow out the profound logic of this pessimistic philosophy and show how it at last reveals a deep-lying contradiction. Some interesting suggestions for a psychology of pessimism are found scattered through these two volumes. It is for the most part a group of chronic invalids that Dr. Saitschick has selected to represent modern skepticism. He himself admits that the various pessimistic doctrines of his representative thinkers may be due in large measure to their continual ill health.

The general reader will find these books interesting and useful, but the members of the guild of philosophers will hardly feel that they fulfill the promise of their suggestive titles.

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The Logical Issue of Radical Empiricism. J. E. RUSSELL. *Philosophical Review*, November, 1906. Pp. 606-613.

Professor Russell's article states in concise form two reasons why radical empiricism may justly be charged with solipsism. It is argued, first, that solipsism is the logical deduction from the empiricist's general notion of experience. Thought is held to be purely derivative and of significance only in so far as it has a cash value in terms of concrete experience. But experience, whether we consider the *terminus a quo* or the *terminus ad quem* 'is undeniably just this individual's own experience; as such, it has for its defining character, its *quale*, a "this-mine" quality' (p. 607). And the transitional states show precisely the same unique, unsharable quality. For this reason they can exist only between experiences of the same individual.

In the second place, solipsism follows from the empirical doctrine of perceptual experience and of the knowledge of other minds. As James holds, the same experience is both object and knower, according to the context in which it is taken. In criticism of this, the author does little more than repeat the conclusion already drawn, pointing out that it is impossible for the individual to escape from the context denominated the knower, and that the plausibility of the argument lies in the use of terms which irresistibly suggest independent existence. This being the case, there is no difficulty in making short work of the account given of the knowledge of other minds. 'The terminal experiences of these would-be communicating minds are different experiences,' and for this reason there can be 'no junction between these two minds, any more than there is between percipient experience and a thing which is not another mind' (p. 611).

B. H. BODE.

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JOURNALS AND NEW BOOKS

ANNALEN DER NATURPHILOSOPHIE. December, 1906, Band V., Heft 4. *Energie und Richtkräfte* (pp. 409-438): H. HERZ. - The quantitative conception of the world, expressed in the theory of energy, needs supplementation by a qualitative one. Changes occurring in the *direction*—*e. g.*, in the case of refracted rays—and in the form of energy—*e. g.*, from heat to light—are not proved to be commensurable with *work*-performing energy. Hence the appearance of chance. Such changes demand the concept of 'direction-force,' as distinguished from work-force. Direction-force is structural and also functional in its effects. Structurally it has three types: juxtaposition, superposition and organization. Functionally direction-forces are shown to be important and most neglected in every field. The outcome of the concept seems to be that the author opposes to the hypothesis of psychical *energy*, or *work*-force, that of psychical *direction*-force (*Richtkräfte*). *Ein hypothetisches 'Parallel'gesetz* (pp. 439-448): TH. ZIEHEN. - Parallel laws concern the relation of stimulations to sensations: *e. g.*, were the relations of wave-lengths to colors in sensation subsumed under a law, that would be a 'parallel,' not a causal law. To assist in arriving at such a law the differential equations corresponding respectively to variations in quality and intensity are suggested. *Zur Kausalitätslehre* (pp. 446-448): W. M. FRANKL. - If the following is assumed: Every positive, temporal fact is conditioned by another which immediately precedes it,—then twelve propositions, which are stated, inevitably follow. *Das Duale System der Harmonie VII. Dissonanz und Auflösung. Harmonisierung* (pp. 449-503): A. v. OETTINGEN. - A highly technical article apparently continuing an exposition of the musical notation and instrumentation by which the present compromises between purity of tone and practical convenience may be obviated. *Die*

Ältergrenze (pp. 504-511): W. OSLER.—The advantage of frequent change of place for professors, to avoid arrested development as well as *progeria*—the latter a disease from which a whole faculty has suffered. The folly of supposing that all professors get old at the same age. "One can scarcely name a great and far-reaching victory which was not given the world by a man who had not yet attained the prime of life." "It is my second fixed idea that men over sixty are superfluous." "Study till twenty-four, investigate till forty; practise till sixty; then retire." *New Books* (pp. 512-520): W. O.—W. Schallmayer, *Beiträge zu einer Nationalbiologie*. G. Heymans, *Die Gesetze und Elemente des wissenschaftlichen Denkens*. W. Jerusalem, *Wege und Ziele der Ästhetik. Berichtungen*.

Mitchell, W. *Structure and Growth of the Mind*. London: Macmillan & Co.; New York: The Macmillan Co. 1907. Pp. xxxv + 512. \$2.60.

Poincaré, Lucien. *La physique moderne, son évolution*. Paris: Ernest Flammarion. 1906. Pp. 311.

Schiller, F. C. S. *Studies in Humanism*. London: Macmillan & Co.; New York: The Macmillan Co. 1907. Pp. xv + 492. \$2.70.

Thouvenez, E. *Éléments de morale théorique et pratique appliqués à la pédagogie*. Paris: Belin. 1906. Pp. 647.

Wentscher, Max *Einführung in die Philosophie*. Leipzig: Göschen. 1906. Pp. 174. 80 M.

Wheeler, Charles K. *The Hundredth Century of Philosophy*. Boston: James H. West Co. 1906. Pp. 171.

NOTES AND NEWS

PROFESSOR JAMES H. LEUBA, of Bryn Mawr College, has furnished the JOURNAL with the following note on a new method of producing color stimuli of definite saturation and of testing Weber's law for color sensations: "Psychologists will be interested in the work being done at the Bryn Mawr College chemical laboratory by Dr. Horn and one of his students, Sue A. Blake, as outlined in a series of papers on 'Variable Sensitiveness in Colorimetry,' published in the *American Chemical Journal* (Vol. XXXV., p. 253; XXXVI., pp. 195, 516). In the first paper the authors show that 'at certain definite concentrations, the comparison in the colorimetric determination of chromium can be made with greater ease and accuracy than at other concentrations.' In two subsequent papers they prove that, within certain definite and experimentally determinable limits, changing with each coloring substance, the amount of the coloring substance that will produce a just observable difference in color is a constant fraction of the total weight of the coloring substance already present. Thus they verified by a new method, and within limits, Weber's law for colorations due to potassium chromate (yellow), copper sulphate (blue) and ammoniacal solution of copper sulphate (violet).

They believe that this conclusion can be extended to all coloring substances. The chemist interested in colorimetry will find here an experimental demonstration of the truth of the commonly made assumption that the coloring power of a substance is definitely proportional to its weight. He will learn, in addition, that the most delicate results can be obtained in colorimetric analysis only within certain limits of color saturation, experimentally discoverable. The psychologist will note: (1) That we have here a demonstration of the practicability of a new and very simple method of producing solutions of a definite color saturation, a method in which the measurement of the amount of the coloring substance and of the liquid in which it is to be dissolved takes the place of photometry or of sensation judgment. Exact matches and perfectly graded series of color saturations can be prepared with ease within the limits of the validity of Weber's law without having recourse to anything more than a delicate balance and a measuring vessel. (2) That he is put in possession of a convenient method of studying the relation of color sensation to stimulus. Beyond the limits of psychophysical validity, the curves established by Horn and Blake exhibit surprising movements. They are, however, regular enough to suggest the possibility of reduction to relatively simple laws. There is here, it seems, a territory within which psychophysical researches might yield rich returns. The regularity and consistency of the results obtained, within the limits in which Weber's law was found to hold, show that, at least for those ranges of concentration, the manner of determining the least observable color difference was sufficiently accurate. Dr. Horn intends to extend his investigation to other colors and to determine more exactly the portions of the curves falling outside of the field of Weber's law. Greater care in the control of the objective and subjective factors influencing color vision will probably be necessary in these regions."

ONE of the most encouraging features of recent developments in psychology is the growth of what may be called 'clinical psychology.' The prospectus of a new journal, *The Psychological Clinic*, is so interesting that we copy here the following portions of the announcement: "During the last ten years the laboratory of psychology at the University of Pennsylvania has been conducting a psychological clinic, in connection with its work in child psychology. Children from the public schools of Philadelphia and adjacent cities have been brought to the laboratory by parents or teachers; these children had made themselves conspicuous because of an inability to progress in school work as rapidly as other children, or because of moral defects which rendered them difficult to manage under ordinary discipline. When brought to the psychological clinic, such children are given a physical and mental examination; if the result of this examination shows it to be desirable, they are then sent to specialists for the eye or ear, for the nose and throat, and for nervous diseases, one or all, as each case may require. The result of this conjoint medical and psychological examination is a diagnosis of

the child's mental and physical condition and the recommendation of appropriate medical and pedagogical treatment. The progress of some of these children has been followed for a term of years. . . . To provide for an adequate report of the results of the scientific study of these children, primarily cases of mental and moral retardation, it has been determined to found a new journal—*The Psychological Clinic*. The journal will do more than merely report cases. It will assist toward perfecting the detailed operation of the clinical method in psychology; it will seek to increase the number of active contributors to clinical psychology, and it will necessarily present and discuss the principles of psychology that are exemplified in the analysis of the several cases. . . . *The Psychological Clinic* will be devoted primarily to the study and treatment of mentally and morally deficient children, but this will not preclude the consideration of other types deviating from the normal child, nor yet of that hypothetical type, the so-called normal child. The methods of clinical psychology are necessarily invoked wherever the status of an individual consciousness is determined by observation and experiment, and pedagogical treatment applied to affect a change, *i. e.*, the development of such individual mind. Whether the subject be a child or an adult, the result of examination and treatment may be conducted and expressed in the terms of the clinical method. Thus, the phenomena of adolescence, of criminality and insanity, are best investigated by the clinical method. The neurologist and psychiatrist are just awakening to a realization of the psychological and pedagogical significance of the treatment usually prescribed in cases of hysteria, psychasthenia, aphasia and allied mental disorders. *The Psychological Clinic* will be issued monthly on the 15th of the month, excepting July, August and September. . . . All business communications should be addressed to *The Psychological Clinic*, Station B, Philadelphia, Pa."

THE following changes have occurred in the organization of the department of philosophy at Columbia University: Dr. Dickinson S. Miller has been appointed professor of philosophy; Dr. W. P. Montague has been appointed adjunct professor of philosophy; Mr. Walter B. Pitkin has resigned from the department to accept an editorial position on the *New York Tribune*.

DR. R. P. ANGIER, of the department of psychology at Yale University, will lecture at the University of California, March 26–29, on 'Some Tendencies in Modern Psychology.'

DR. P. J. MÖBIUS, the author of books on various pathological, psychological and sociological subjects, died recently at Leipzig, at the age of fifty-three years.

DR. ERNST MEUMANN, of Königsberg, has been called to the chair of philosophy at Münster as successor to Professor Busse.

DR. EDUARD ZELLER has celebrated his ninety-third birthday.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

NON-SENSORY COMPONENTS OF SENSE PERCEPTION¹

THE familiar equivocal staircase figure, if looked at for some time, appears successively as the upper side and as the lower side of a flight of stairs, and perhaps in other ways which need not here be considered. The figure appears to change its character, having now what we may call the upper-side quality and again the under-side quality. Or, we may equally well say, it arouses in the observer sometimes an upper-side consciousness and sometimes an under-side consciousness, for the two qualities, so far from being only marginally present, dominate the field, and the transition from one to the other is striking and at first surprising. The two qualities are markedly different, even antagonistic; and it is a very pretty puzzle to discover in what their difference consists.

The difference might after all reside in the visual sensations, for though the figure remains the same, certain fixation points are more favorable for arousing the upper-side appearance, and others for arousing the under-side appearance. The experiments of several observers² have, however, shown that difference of fixation point is not essential for producing the difference in appearance. Either quality may, with practise, be got with any fixation point, on or off the figure; and the change from one quality to the other may occur in examining the after-image of the figure, a condition which guarantees that no shifting of the retinal image shall occur. Moreover, a fresh observer, who usually gets first the upper-side quality, lets his eyes roam freely over the figure without changing its appearance. We are thus driven from the position that the difference between the two qualities is one of visual sensation. Exactly the same retinal picture may give rise to either percept.

Another source of sensation has to be considered; for eye movements often occur during examination of the figure. Is it a differ-

¹ Read at the fifteenth annual meeting of the American Psychological Association, December 29, 1906.

² W. MacDougall, *Mind*, 1906, Vol. 15, pp. 330 ff.; Wallin, 'Illusions of Reversible Perspective,' 1905, p. 262; Burmester, *Zeitschrift für Psychologie*, 1906, Vol. 41, p. 325.

ence in the feeling of the eyeballs that distinguishes the upper from the lower side of the stairs? Such a view is made difficult by the facts already cited. There is no indissoluble association between any particular eye movement and the upper-side or under-side quality. Beginners often move their eyes in every way over the figure without losing their first mode of perception; and practised observers are able to get the same appearance with either of two opposite movements. When an eye movement is felt, it seems to follow rather than precede the change in quality; and it is felt as something of an entirely different nature from the change in the appearance of the figure.

We are left, then, not only with an equivocal figure, but with an equivocal mass of sensations. The same sensations give rise to two diverse percepts. The difference between the two states of consciousness must, then, according to a widely accepted view, be a difference of images. There must be two images or sets of images, one appropriate to the upper side of stairs, and the other to the under side; and either set of images is necessary and sufficient to give the corresponding appearance. It seemed worth while to inquire into the actual presence of these images, and the unanimity of response was surprising. Persons who, on being examined as to the state of mind occurring just before a voluntary movement or during the solution of an intellectual problem, reported a varying richness of imagery, agreed in the case of the staircase figure in reporting none. They were asked as to the presence of visual, verbal and kinesthetic imagery, but answered with remarkable confidence that there was none.³ The absence of visual imagery was especially noteworthy. One would expect that the bare outline of the figure would be filled in with imagery of real stairs, but my subjects agreed that they saw nothing but the figure; they saw the lines in the staircase form.

The imagemongers are ready with a reply to this sort of examination of their hypothesis. The image was there after all, they will say; it was simply so vague and marginal as to escape introspective notice. But the difference between the upper-side and the under-side qualities in consciousness is clear-cut, striking, absorbing; there is nothing vague about it, nothing marginal. You can not analyze these sharply distinguished qualities into a mass of sensation which is common to both, and differing accretions of imagery which are too slight and vague to be noticed. Something

* Sometimes there were feelings in the eyes regarding which some subjects could not decide whether they were images or sensations; and in some such cases I was unable to see any movement of their eyes. These feelings were subjectively like the feelings of accommodation, and were more probably sensations than images.

more is there. This something more is nothing else than the quality of the upper side of stairs, or of the lower side. My subjects refused to analyze it further, and the attempts to reduce it to sensory terms have failed. It is perhaps unanalyzable, though it may no doubt be classified with other qualities on the basis of felt likeness and difference. It may be called, with Ehrenfels, a form quality; in consideration, however, of the distinction between it and purely sensory qualities, I should prefer calling it a percept quality. It is a non-sensorial component of sense perception.

To advance abruptly from this special case to a general statement, I would advocate the view that every percept has a quality of its own—a felt quality—which can not usually be analyzed into sensory qualities or syntheses of such. I will not attempt a classification of percept qualities, for such a classification, in truly psychological terms, can only come as the result of much painstaking work; and it appears to me that the progress of fruitful study of the non-sensory *functions*—which all must admit to exist—has been delayed by the conviction that, descriptively at least, you can do nothing with a percept or thought except to point out its sensory components. I will, however, call attention to a few more instances in which other than sensory qualities are to be easily found.

First the dot figure, employed in the experiments of William MacDougall and of Benussi. A number of dots arranged either regularly or irregularly on a plain background do not always look the same. The observer passes from one grouping of them to another, in a way that recalls the changes in the staircase figure. A good figure for some purposes consists of a central dot, surrounded by six others in the form of a regular hexagon. This figure can be seen in a large variety of ways, while the fixation point remains on the central dot. The same changes of grouping can be produced in the after-image of the figure, which shows, as before, that visual sensations do not determine the changes. Eye movements are very apt to be felt, but are often, at least, subsequent to the change in grouping, and therefore not its cause nor constitutive of the essential differences between the group qualities. Imagery is usually undetected. In short, the same argument holds as was applied to the case of the staircase figure: the groupings are not describable in sensory or motor terms, but are non-sensory qualities.

Analogous sense material in the auditory sphere is furnished by a uniformly spaced series of equal sounds. Such a series is often heard in rhythmic form, and the same series may be heard in different rhythms. For example, a series of seven sounds may be heard either in $3/4$ rhythm or in $6/8$ rhythm. These differences are not contained in the stimulus, which is equivocal. Nor are

they necessarily represented by imagery. The only question is whether they are not presented by the movements of beating time which are apt to accompany the consciousness of rhythm. There are two objections to interpreting the differences in rhythmic consciousness as differences in movement. First, a record of the movements shows that they are so timed as to synchronize with the sounds which they emphasize; they are not, therefore, reflex effects of these sounds, but must be effects of the consciousness of the rhythmic form; they presuppose this consciousness, and do not constitute it. And second, the recorded movements are often so irregular in accents and pauses that the feeling of them could not possibly constitute the well-organized feeling of rhythm. It would often be impossible to tell from the recorded movements which of the two rhythmic forms was being got. The rhythms are percept qualities.

It is a commonplace in psychology that the visual perception of size and distance calls for more than the sensations of the moment. The imagery hypothesis will have it that in perceiving an object at different distances as of the same size, we picture it as it would look at a certain standard distance, or reproduce the sensations of handling it; such images are, however, not reported by the subjects whom I have examined. In perceiving distance the imagery hypothesis speaks of images of oneself walking to the object; and I suppose that in comparing the distances of two objects one is supposed to have vague images of oneself walking in turn to each of them. Such images, if present, are truly vague, whereas the perception of distance is clear. The truth is that the appropriate size qualities and distance qualities are clapped on to the sense presentation without the intermediary of sensorial imagery.

Another sort of percept qualities are the thing qualities. A clanging noise, let us reasonably suppose, sounds in our ears as we sit here, and is immediately perceived as the ringing of a street-car bell. The consciousness of the thing, car, is something more than the heard noise. Some of us may experience, in addition, the visual image of a car, others may hear the word *car*, others may feel as if they were running to escape from a car. Others will experience none of these forms of imagery, and yet will be clearly conscious that it is a car-bell they hear. If a musical instrument is held up before you, some will immediately hear its peculiar note; but more will not, and yet will perceive the thing as a definite kind of musical instrument. The thing quality is probably present alike in all our minds. It is interesting to note in what straits the imagery hypothesis lands us, in the light of individual differences in imagery. You, let us say, on hearing the clanging noise, see a

car; your neighbor hears the word *car*. As the visual and auditory images have no internal likeness, your perceptions are entirely unlike save for the clanging noise. Yet in some way you agree; and may live together for years, agreeing in all sorts of perceptions, with never a suspicion that you have nothing in common but the pure sensory data—so far as even these are common.

Percept qualities appear to be numerous. Each thing perceived, each size and shape distinguished, probably we should add each relation observed, has its own felt quality, which is not one of the qualities of sensation. The attempt to describe percept qualities as syntheses of sensory qualities is hypothetical in the second degree. The presence of the required images is hypothetical; and no less hypothetical is the power of the images, if present, by combining with the sensation to produce a percept. They might fuse, no doubt! But is the feeling-together of clanging noise and visual picture fully equivalent to the perception of a ringing car-bell? Were the two not felt as attributes of one thing, their mere simultaneous presence in consciousness would not give the percept which is actually experienced. The thing quality must be present if we are to have the consciousness of a thing or of properties of a thing.

A certain air of mysticism, pervading our percept qualities and indeed the whole doctrine of imageless thought, will perhaps be dispelled by the introduction of a conception which is well fitted to take the place of that of synthesis. I call this conception that of mental reactions. A percept is not a synthesis of sensation and image; it is a reaction to the sensation. It is not a motor reaction, but a mental reaction. In the broadest definition, a mental reaction is a mental effect of some, often conscious, cause. Thought *A* calls up thought *B*; *A* is the stimulus, *B* the response or reaction. In the case of the staircase figure, the sight of the lines is the stimulus, the thought of the upper side or of the under side of stairs is the response. This conception certainly seems obvious and trite enough. But its implications are worth considering. The response, though aroused by the stimulus, is a new event, not to be resolved into terms of the qualities of the stimulus. No one attempts to describe a motor reaction in terms of the stimulus that arouses it; the pupillary reflex can not be described in terms of the brightness of light, nor the scratch reflex as a synthesis of sensations of itching. The motor reaction is a new event, causally dependent on the stimulus, but having its own identity, its own peculiar quality. So, a mental reaction has its own identity, its own peculiar quality. A certain mass of sensations, itself aroused by the light reflected from a printed page, suggests a word. The word consciousness is

a new event, not describable in terms of the sensations that aroused it. Nor is it describable in terms of auditory imagery, in case this should also be aroused; for auditory sensations would themselves be but the stimulus to the mental reaction of hearing a word. The word qualities, aroused by hearing or reading, are qualities in their own right; not sense qualities, nor syntheses of such, but percept qualities.

Nihil est in intellectu quod non prius in sensu. As a psychological doctrine this is false; the content of thought includes qualities not included in sensation. Nor is it true with the qualification, *nisi intellectus ipse*, for it is not simply an activity nor a universal form of thought that is added to sensation. There is not one additional quality, but many, corresponding to the multiplicity of percepts and thoughts. As well might one say, *Nihil est in motu quod non prius in sensu*, or qualify this merely with *nisi motus ipse*. It is true in both cases that the reaction, whether motor or mental, is ultimately dependent on sensation as its exciting cause; and this fact, from the point of view of the criticism of knowledge, is perhaps as significant as the literal truth of the old maxim would be. But psychologically it makes a great difference whether we say that all consciousness is sensory, or whether we simply say that all forms of thought are primarily responses to sensation. The former statement is entirely inadequate to the facts of psychology; the latter has at least great biological probability.

The concept of a mental reaction is indeed essentially biological; and the doctrine of percept qualities, and of non-sensorial components of thought in general, appears specially natural and probable in the light of brain physiology. The mere fact that the sensory centers cover so small a portion of the cortex is suggestive. It may be that the non-sensory areas contribute no new qualities of consciousness for the good reason that they are unconscious; and to this view so acute a sensationist as William MacDougall⁴ is logically driven. There is no *a priori* impossibility in such a view—nothing is impossible—but there is surely no such strong probability about it as to fortify the sensationalistic doctrine. Much more likely it seems that consciousness attends the activity of the non-sensory areas, and that such consciousness is non-sensory. But we have more than this general balance of probability in our favor. All the definite knowledge we possess of brain physiology goes to show that the principle of the mental reaction is sound—that, by means of association fibers, the sensory areas excite other areas and these in turn others, tending finally, no doubt, but by no means always directly, toward the motor area; and that with each new reaction new qualities of conscious-

⁴ 'Physiological Psychology,' p. 92.

ness arise. Our definite knowledge comes mostly from the study of the aphasias and similar losses of function. We know, for example, a visual area in the neighborhood of the calcarine fissure, destruction of which causes blindness. We know also that the destruction of some of the neighboring areas causes not loss of visual sensation, but loss of the power to perceive printed words. It is not the pure sensory appearance that is lost, nor is it solely the associated sound of the words—an association which, as we know from normal experience, is not necessary in reading—nor again the associated feeling of the spoken words. It is not exactly the comprehension of the meaning of the words, for the patient may be intellectually sound;⁵ it is simply the quality of seen words. Similar statements can be made regarding word-deafness. The indications are certainly that the retinal excitation first arouses the activity of the visual sensory area. This is the first of a chain of cerebral reactions, the visual area arousing the near-by word-perceiving area, and this in turn probably other areas whose function is the understanding of the word and the providing of related ideas. Each of these reactions is a new cerebral event and is apparently attended by a new mental event; the word-blind individual has lost, not only a function, but he has lost certain forms of consciousness that normally go with reading. Cases of object-blindness and of music-deafness show that other reactions besides the linguistic are carried out in a similar way. The perception of an object through sight depends not only on the visual area, and not on the associated activity of other sensory areas, such as might reproduce other sensations derived from the same object—and not, it should be added, on the activity of the motor area—but on the activity of a special area, the function of which is simply to perceive a certain sort of object.

Though each perception area is primarily excited from a corresponding sensory area, there is good reason to believe that it can later be aroused from other parts of the brain. Dr. Marshall, in a recent article,⁶ has presented with much force a view closely related to that of this paper. The lack of vividness and sensory incisiveness which characterizes an image is due, he urges, to the fact that in the correlated brain activity, not the sensory centers are active, but closely connected centers that were at first aroused by the sensory centers. There is much in the experience of persons with poor imagery to support this view. One may think of three shades of red, and afterwards pick them out from a miscellaneous lot of colors, and yet have

⁵ This statement should now be made with some reservation, in view of the current discussion of aphasia, begun by Marie. But it remains true that word-blindness does not involve inability to have certain meanings or concepts, but only the inability to have these aroused through reading.

⁶ *Mind*, 1906, N. S., Vol. 15, pp. 61-62.

had nothing like a reproduced sensory experience of the reds, nor necessarily any names for them. A large number of similar facts, which will probably well repay investigation, seem to show that the content of reflective thought, even where it is concerned with physical objects, consists more essentially of percept qualities than of sensory qualities.

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HUMANISM AND ABSOLUTE SUBCONSCIOUSNESS

IT is characteristic of modern thought about the absolute that it depends mostly upon an interpretation, usually vague and unrestrained, of the implicates of self-consciousness. Awareness—at least in outline, if not in detail—of an absolute experience is involved in those finite feelings of self-transcendence in which alone self-consciousness consists. So philosophy since Descartes has reiterated.

Even radical empiricism must admit that once an agent becomes self-conscious, his simplest sense-experiences, his most frivolous processes of attention or will, his pettiest emotions, do nevertheless, in their own measure, implicate an absolute experience as their ground. The humanist temper, curiously enough, is itself becoming radically self-conscious in its opposition to absolutism. In its habitual celebrations of common sense, humanism inadvertently caricatures the celebrated 'plain man.' It seems to characterize him as a person in whose eyes there is no glimmer of speculation whatsoever, for whom there simply is no beyond, no mystery, no unknown he might not fathom and manipulate *if only he had the will*. But humanism, when it rises above this initial plane of brute pragmatism, will feel the need of larger equipment as a philosophic method. It can prevail, if at all, not merely by substituting for the 'romantic insolence' of the older idealism this endless tragedy of human nescience. In the place of this practical denial of the residual God of self-conscious experience, it must order its own humane yet certified account of ultimate existence.

After all, between humanism and absolutism there should be only a difference in their respective ways of interpreting the implicates of self-conscious experiences; a variation in the respective moods—the one quiescent and beatific, the other militant, heroic, affirmative—in which they face that subconscious region wherein all radical experiences tend to lose themselves. To the absolutist temperament there is something delicious, to the humanist something horrible and ghastly, in this process by which its self-conscious finitude is sopped up in the subconscious. Out of this single yet radical conflict of

temperaments there issue, indeed, two practically opposed world-views.

What is the precise nature of this 'highest self'? What the concrete content of this absolute experience into which our partial and private selves are transmuted? It is precisely here, in their diverse ways of approaching this restless query of common sense, that humanism and absolutism show most plainly the difference in their initial motives. Absolutism declares the highest self to be concretely completed experience in a certified *ontological* sense—the somehow-we-don't-know-how sense of its one consistent advocate, Mr. Bradley. Humanism, on the other hand, affirms stoutly, and so far brutally, that this highest self is not completed experience in any concrete sense whatsoever; it is absolute, if at all, only in a *functional* sense, *the postulate merely of humane and fugitive self-consequences on and on indefinitely*.

This non-sequential vagueness with which the absolute self has been treated in the literature of romantic idealism, and which has left it open to such free and easy attacks from the camp of the hard-fisted empiricists, is improved somewhat by the more modern interpretations of this highest self as subconscious. Indeed, it is rapidly becoming a mannerism to speak of this absolute merger of finite and competing selves as their subliminal partnership. This translation of the absolute into terms of the subconscious began, of course, with Hartmann's 'Philosophie des Unbewussten' (1869). In the unconscious is realized the very contradiction of idea and will in which alone self-consciousness exists!

In a word, the unconscious is that region into which all the agent's daily and normal processes of experience seem to sink beyond recall or control. Within one's waking, focal consciousness certain processes are flowing on with relative clearness, distinctness and adequacy, in a lively fashion, and with practically certain intelligibility. But this central current of the agent's stream of experience eddies from its middle in the direction of less and less clearly associated contents until, so far as any radical contribution they may make to the total stream is concerned, the eddies altogether cease to be tributary to the current experience of the agent himself. If subconsciously the agent tend toward neuropathic experiences, this marginal and unconscious mind is the region of his sensory and motor automatisms, his hallucinations, his photisms, his dual personality, etc. If subconsciously he be normal, it is merely the region of his organic memories, his absent-mindedness, his utter sleepiness, his total oblivion (it may well be). In either case the remarkable point is that this subconscious is the region of absolute experience.

Consider Hartmann's own identification of the unconscious: (1)

the unconscious does not fall ill; (2) the unconscious does not grow weary; (3) all conscious ideation has the form of sensibility; unconscious thought can only be of a non-sensuous kind; (4) the unconscious does not vacillate and doubt; it needs no time for reflection, etc.; (5) the unconscious does not err; (6) consciousness only acquires its value by means of memory; to the unconscious, on the other hand, we can ascribe no memory; (7) in the unconscious, will and representation are united in inseparable unity.¹

So much for Hartmann's metaphysic of the unconscious. To facilitate a result I intend to urge presently, let me submit the following psychological identifications of the subconscious:

1. There is a sense in which the entire consciousness, as such, of all forms of life below the level of differentiated sense-areas is subconscious—the undifferentiated experience of all plants, and of all animals below the level of the *cœlentera*.

2. In a large measure the initial experience of a new-born animal or human child is subconscious. These primitive blotches of experience, this vegetating animal consciousness, this all but perpetual sleepiness, what is it but experience upon the uncertain borderland of the perfectly subconscious?

3. There is a sense in which world-consciousness at its outset was subconscious. In that primitive beginning when, physically speaking, there were no elements but just undifferentiated ether, there must have existed either no consciousness at all or else bare consciousness, mere fluency, just *thatness* without any identifying *whatness*.² In the spirit of the new realism one would suppose the former, whereas in the spirit of the older idealism one would hold the latter, to be the true description of this initial cosmic life. But (at the best) bare consciousness is precisely the undifferentiated experience into which any normal and differentiated experience, human or cosmic, sags off.

In short, with respect to their origin, we may suppose that all

¹ 'Philosophy of the Unconscious,' Vol. II., pp. 47–61, *passim*.

² That cosmic processes did have such a beginning in an ether absolutely fluent and without quality and that these processes of concrete differentiation are still incomplete, several lines of scientific investigation have recently suggested, *e. g.*, the results of spectral analysis showing an inverse relation between the number of elements in a nebular mass and the primitiveness of that mass as expressed in terms of heat; the suggestions from radioactivity of a primitive substance without quality; the mathematical demonstrations of the actual finitude of the present stellar universe; the variability in atomic weights of different specimens of the same element whose qualities as conceived under this form of atomic weight were formerly regarded as fixed and absolute; the description in general of 'quality' as the phenomenal expression of variously grouped ether corpuscles, themselves absolutely undifferentiated in terms of quality, and even identical in form.

discriminating experiences arise as variations within a subconscious, wholly undifferentiated, absolute spirit. But this record of the origin of finite distinctions implies an account of their present subtle connections. For it is in precisely this same subconscious matrix in which self-consciousness was conceived that it must remain so long as its inner impulses are only partially delivered. More particularly, finite self-dirempted experience, in so far as it is normal, shades off into either the one or the other of the following conditions: 1. The subconscious surrounding these focal processes is the region of the agent's habitual automatisms, the region that gets his breathing and heart-beating and blood-circulating done decently and in order; the region, too, of his organic memories, concerning which in certain cases one may doubt the possibility of their conscious recall even in hypnoid states; the region also of his instincts and habits, and like acquirements out of his own past and that of his race; the region, perhaps, of his organic feelings, his muscle and joint strains. 2. Or else the subconscious is the region of bare consciousness in which in no real sense do distinctions of any sort exist; that region one dwells in just before relaxing into wholly unconscious sleep or into which one is hastened by the toxic action of certain drugs or gases; that region into which the mystic swoons when intoxicated by his excessive feeling of God.³

In either case the region of the subconscious is not richer in consequential qualities, but poorer, than the region of the supraliminal.⁴

But there is a distinction, it may be urged, between this finite agent's subconsciousness and absolute experience. As I understand the matter, this distinction may mean either one or the other of two very different things.

1. In the first place, it may mean that those elements which are subconscious from the point of view of their partial proprietor, the

³ A reversion, indeed, to that primitive condition of undifferentiation, to have arisen out of which constitutes the chief merit of self-consciousness and to remain out of which is its perpetual function!

⁴ In view of these recent elaborations of the subconscious I find myself increasingly dissatisfied with the still current figure of the stream of consciousness. Would not the facts be better symbolized by a more cosmic figure? A system of experience might better be described, say, as spherical—a growing sphere rather than stream of consciousness. Its glowing center is pent-up, rendered conventional, by its hard crust of habits, automatisms, instincts, laws—the 'cognitions,' the solid things and thoughts of the new realism; in a word, its otherwise licentious and inconsequential fluency is restrained by innumerable regulations from what we might call the *physically* subconscious. Nevertheless, this glowing center does erupt through numerous holes, through deep gashes of finitude forever open and sensitive in the direction of what we might name the region of the *spiritually* subconscious; a region, as subconscious, cold and distinctionless, but being constantly warmed by the flowing into it of the lava of human passion.

finite agent, are not at all subconscious in their absolute relations. The agent's normal automatisms, for example, are by no means automatic in that world-experience wherein they find their final analysis, their ultimate ground of action. The agent's breathing, the circulation of his blood, and all such processes, an absolute experience is in conscious and operative control of. Of his organic memory it may be said that the things the agent, as partial and through consequent neglect of attention, has forgotten, and which he recalls only in those special times when his subconscious erupts over his supraliminal plane,—these things are not for an instant either slurred over or 'dropped out of the absolutely supraliminal, concentrated foci of the world-ground. This is, indeed, the point where natural mysticism and common piety have always felt a certain community of belief; both have held it to be literally true, this doctrine of God's concentrated immanence in the world-ground. Their common motive is obviously that of concrete monism. That absolute experience is not thus concretely finished has already been suggested on scientific grounds. That absolute attention *need* not be interpreted as thus concentrated everywhere, but that, on the contrary, even absolute experience may acknowledge the distinction of focal and marginal, supraliminal and subliminal elements, I hope to show as the conclusion of my paper.

2. But perhaps it might be claimed that what, as subconscious in a finite experience, is qualitatively lower than the agent's daily processes of coordination and control, when conceived as subconscious in an absolute experience is qualitatively higher than any possible process of fixation and control in time. But in this case it is important to distinguish two possible applications of its intention:

(a) This argument for the greater worthiness of absolute as compared with finite subconsciousness may intend what in general mechanical monism since Aristotle has always insisted upon, namely, that processes not really focal or controlled in a world-ground do yet as a fact and by inner necessity work themselves out perfectly and harmoniously. But we have no data arguing conclusively such perfection in the working out of absolute marginal into absolute focal consciousness, nor could we conceivably uncover such data; for, once uncovered, they would appear not as subconscious at all, but as focal. Moreover, the absolute goodness thus made out as of mechanical necessity is qualitatively lower than a goodness working itself out in life through trial and error, through absolute risk and blunders. Here we may remark in its cosmic application the norm of humanism: personality, whether human or cosmic and wherever present in experience, must exist as focal, *i. e.*, as aiming at its own fulfillment in time and in space.

(b) Indeed, the very insistence upon the superior worth of an absolute as compared with a finite subconsciousness thus comes to denote the essence of humanism; its frank unwillingness in the absence of empirical evidence to believe that absolute experience is continuous in the sense of critical monism; its hypothetical belief, on the contrary, in an absolute subconsciousness, a bare world-consciousness so far not explored even by God, a marginal region, an abstractly absolute experience, a distinctionless beyond into which a focal world-experience is even now streaming. And it is the cosmic postulate of humanism that this marginal region as it becomes focalized in the growing experience of this world-consciousness is indeed filled increasingly and concretely with experiences clearly and distinctly harmonized within a humane kingdom of ends. Absolute subconsciousness, *as subconscious now*, has no consequences either good or bad for finite or for cosmic consciousness; its consequences are hypothetical, its significance a postulate merely, its ends postponed but self-affirmed beatitudes.

Even the highest self into which our finite systems of experience may humanly transcend themselves is in kind a finite selfhood. Even a world-consciousness in so far as it is self-conscious is humane. The distinction between absolutism and humanism resides just here: the absolute is the God of being, the divine the God of becoming; *the absolute becomes divine in humane self-consciousness*.

I conclude accordingly: 1. In so far as elements of experience subconscious to the finite agent (his automatisms, habits, instincts, etc.) are in the same sense subconscious in the world-ground, they do not affect in any way that region of normal tragedy, of moral and religious crisis, within which focal processes of self-consciousness are quick and fugitive.

2. With Hartmann this automatic character of subconsciousness is concealed under terms of soothing evasion. Nevertheless by his own showing every articulate connection between absolute and human self-consciousness breaks down: an experience so faultlessly automatic, so perfectly instinctive, so smoothly functional that it never falls ill, is never weary, is never sensuous, never vacillates, requires no time for reflection, never errs, never has occasion to remember or anticipate, and in which will and representation are in inseparable unity,—an experience as smooth as all this eludes the grasp of the finite, coarse-grained experiences of men. The self-consciousness of the latter consists in the very fact that they do fall ill, do grow weary, are sensuous and vacillating and erring, and in need, therefore, of guidance and chastening through memory. Humane self-consciousness exists on the sole condition that will and idea remain thus mutually contradictory. A rigorously remedial tran-

scendentalism does relieve the sickness and pain of finite self-consciousness, but only by administering to finitude an absolute anesthetic, a thoroughgoing euthanasia no human convention is ever likely to legalize. According to cosmic humanism, the very moods in which under pain of self-diremption men have become self-conscious (these incertitudes, these tragedies, these sicknesses of the soul) are symptomatic of a self-diremptive, an imperfectly self-sacrificial character which persists as an eternal defect, a fundamental and perpetual stimulus in the very heart even of absolute experience.

Self-consciousness, whether human or divine, is sanctioned by just this quality of sensitive humaneness. As humane, self-consciousness has been chastened in time into deep and solemn concern over these future possibilities which even now its own will-to-believe is actualizing within that absolutely subconscious region into which it is aiming its fiducial discharges. The humanist mood is therefore not superficial, utilitarian, brutal, whimpering, morbid, but erect, quick, heroic, practising in the presence of questions very explicitly felt, problems very exacting, purposes very seriously entered into. The humane agent's emotive and motor life is clearly committed to their fulfillment; yet the tragedy of it all consists in his adequate recognition that the answers, the solutions, the fulfillments are so far forth problematic. Problems, human or divine, require time for their solution. A being in which, as monism habitually affirms concerning absolute experience, problems are instantly solved, purposes instantly fulfilled, would be a reality in which problems and purposes were not felt as such; but purposes and problems not felt as such are not purposes or problems at all. A consciousness, protoplasmic or cosmic, in which there were no pauses for reflection, no moments of uncertainty, no hours of tragedy, might indeed be thus conscious; it certainly would not be self-conscious. For self-consciousness *is* absolutely nothing except the emotive and volitional strains central in an experience focally engaged in the working out of problematic elements, purposive interests, toward their solution and fulfillment in time,—and with full and frank awareness of the uncertain outcome of the growing process itself. It must be insisted, not that absolute experience *is* thus self-conscious in this humane sense, but that, *if* it be thus humane, it in its own present must have questions, problems, purposes not yet solved and fulfilled, and must have, therefore, in its own future possibilities concerning which not even itself may affirm their certain nature. In the interest of this cosmic humanism absolute experience must be reconceived so as to bring it into time, must be reinterpreted so as to relate it to the world of realism and common sense.

Enough has been said to indicate that this humane self-conscious-

ness is in no proper sense subconscious. Indeed, quite the contrary. Humanism is emphatic and exclusive in its esteem of that central glowing which characterizes moments of phenomenal self-consciousness, moments, that is, when subconscious processes (automatisms, habits, instincts, voices, lights or what not) fail, and the agent finds himself more or less vainly seeking a normal outlet for his pent-up desires, impulses and aspirations. And it would seem that the only *normal* outlet would be no fading away of this glowing center of experience into an unconsciously higher self, but rather an expanding and adjusting of its glowing vigor in the direction of purposes clearly conceived by the agent himself, or else fairly communicated out of a world-experience like his own, only more experienced, wiser, less ill, less weary, etc., than it. The relationship between this finite self and any other higher self, human or divine, could be only social and not ontological; a relation, if it be humane, of sympathy and cooperation; a unity of purpose, but not of being. Not even absolute sympathy or love can ever wholly mitigate the tragedy of finitude.

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REVIEWS AND ABSTRACTS OF LITERATURE

Morals in Evolution. L. T. HOBHOUSE. New York: Henry Holt & Co. 1906. Pp. xvii + 375; vii + 294.

The appearance of this work, as well as the similar one of Westermarck, marks the change that is coming, or has already come, in the treatment of ethical problems. Logical analyses of supposed absolute concepts are no longer in favor, but a study of the genesis and growth of moral institutions is regarded as the necessary preliminary for any discussion of the theory of conduct. Morality has opened its eyes to its real basis and insists upon standing on the firm ground of fact and experience, however far it may lift its head into the clouds. The evolutionary method in ethics has come to stay, as it has in every other biological science, whatever may be the variation of opinion as to its meaning and relative importance. And that this method has come to mean something quite other than it did fifteen or twenty years ago this study in comparative ethics is striking evidence. Evolution is here interpreted as neither mechanical nor dialectic, but vital and real: not as an explanation of a dependent process, but as an empirical formulation of an actual progress.

In spite of the title of his work, the author disclaims any intention of presenting a theory of the factors in evolution or even of asserting the reality of evolution itself. His study is essentially of the facts themselves, and only incidentally and finally of their interpretation. His

"object is to distinguish and classify different forms of ethical ideas—a morphology of ethics comparable to the physical morphology of animals and plants. The results of such a comparative study, if firmly based on recorded facts, would remain standing if the theory of evolution were shattered. At the same time, here as elsewhere, the results of classification when seen in the light of evolutionary theory acquire a wholly new significance and value. They furnish us with a conception of the trend of human development based not on any assumption as to the underlying causes at work, but on a matter-of-fact comparison of the achievements reached at different stages of the process itself." This comparison is necessarily between accepted standards of living rather than between the actual modes of living, since it is practically impossible to determine how far conduct has conformed to its ideals, yet the author tries to discriminate between standards actually in use and those which are merely ornamental, or for Sundays. Again, since conduct is increasingly reflective, and men not merely apply rules but also give reasons to themselves why these rules are valuable, a study of moral progress must include a comparison of these ideas about morality or a history of ethical principles. And since, further, rules of conduct are not independent creations but are determined largely by economic conditions and religious beliefs as to the order of the world, it is necessary to include these also in the scope of such a work. And if these forms are to be arranged systematically, they must be correlated with the stages in the advance of general culture, for moral development is only one aspect of social development. This fixing a measure of social progress is, as the author recognizes, a difficult task and one which can, at the beginning, be settled only tentatively, awaiting the final interpretation of the facts. Such a scheme of social evolution with which to correlate moral institutions, the author finds in the division of the principles of social unity into those of kinship, despotic authority and citizenship. His problem is first to group the moral ideas belonging to these three stages of development and then to discover, if possible, some common principle of advance which may throw some light on the meaning of the process. The first of these bulky and externally unpleasing volumes contains the study of the growth of moral standards in the three social stages. The second contains the record of moral and religious theories during the same periods, as well as the author's only too brief summary and interpretation.

With such a program the work is necessarily of an encyclopedic character, admitting of little criticism in detail save by one who has himself covered the same ground as exhaustively and carefully as has the author. While Mr. Hobhouse disclaims any great first-hand knowledge of the facts, his work hardly confirms his modesty. Everywhere there is evidence of the most painstaking reference to the sources and nothing suggestive of the superficialities of the mere generalizer. If one might suggest a perplexity, it is as to the principle of selection in the case of the institutions considered. They seem to be taken somewhat at random. After the discussion of the general development of the organized admin-

istration of justice comes the consideration of marriage and the position of woman, the relations between communities, class relations, property and poverty. These are certainly fundamental institutions, but a good case might be made out for others equally as important. In the development of these ideas the author finds "a double movement marking the transition from the lower to the higher levels of civilized law and custom. On the one hand the social order is strengthened and extended. The blood feud yields to the reign of law, personal chieftainship to a regular government and an organized police. . . . On this side the individual human being becomes more and more subject to social constraint. In this relation liberty and order become opposed. But the opposition is not essential." The individual finds his real liberty and personality in this social order to which he is subject. His own essential humanity is deepened at the same time that the idea of a common humanity is broadened. The term humanity has, in fact, two meanings intimately related, "for 'humanity' as a whole is the society to which, by virtue of the 'humanity' within each of us, we really belong, and these two meanings are the poles between which modern ethical conceptions move. Thus if we are to sum up the whole process sketched in this volume in a phrase, we may say that it is in this double sense to realize humanity."

The second volume traces the development of ethical and religious theory, in which is contained the history of man's explanation of the value he assigns to his successive codes of conduct. At first, in primitive thought, we find hardly anything which can be dignified by the name of a theory of conduct, but as religious conceptions become more definite they involve an explicit basis for morals. In his treatment of this primitive religious stage the author is somewhat vague in his use of the term animism as denoting all early religion, a vagueness which even the limitations of space hardly excuse. The succeeding discussion of the development of monotheism, however, with its resultant problem of evil and its inevitable tendency to subordinate ethics to religion, is excellent. So, too, is the brief history of ethical theories from the Greeks to our own day, especially in its analysis of the conditions which gave to modern ethics its distinctive problems.

The meaning of the whole development of moral standards and theories, as the author reads it, is that humanity is advancing toward self-knowledge and self-control. Moral rules are the principles of individual and social life, at first wrought out unconsciously in the pressure of daily life, later made subjects of deliberate reflection. Their authority is not arbitrary, but practical, resting on the needs and possibilities of human nature. They therefore vary as mankind develops, and each generation has the task of adjusting its conduct to its situation. The test of truth in morals is necessarily the practical one. A standard of value 'must give harmony, order, coherence to our efforts and our judgments, while its negation must leave them disordered and discordant.' With a living experience, therefore, finality is not to be expected of any body of rules.

Nor may we prophesy as to the direction or goal of development save that the two elements which have formed the poles of ethical thought, the individual and the social order, must both be included in any final synthesis. The individual has no absolute rights, yet the social good must give freedom to the individual. And, above all, man will become increasingly master of his own development, "for progress is not something that goes on of itself by an automatic law or an inherent tendency in things. The struggle for existence is not, as such, a force that makes for human betterment. . . . If the evil of the world overthrew the doctrine of unconditional creation, the disorders and reactions of history are no less fatal to a purely teleological doctrine of the world process. There remains the possibility, however difficult to conceive in concrete shape, of a spirit subject to conditions and achieving its full growth only by mastering them. If this view is correct, progress is made only in so far as the conditions of life come more and more under the dominion of mind."

That this interpretation of history is not original is obvious, nor is it so claimed by the author. The basis of it is the positivist humanity metaphysically strengthened and broadened by the spirit of Hegel. The skepticism is eliminated or transformed into a partial knowledge, and the optimism is restrained. And yet of this latter there is perhaps too much in the ease with which the reconciliation of the individual and social interest is effected. There remains, too, and unnecessarily, the realistic interpretation of humanity with all its vagueness and possibilities of misinterpretation.

Measuring the work by its own standard, which is not that of originality of theory, one must ascribe to it a unique value as a collection of the facts upon which any interpretation of morality must be based. In such a vast collection of material it is almost a necessity that the principle of arrangement should at times be but dimly discernible and that the correlation of moral institutions with successive stages of social development be not always convincing. So much is this the case that the final interpretation comes as something of a surprise as well as a relief to the industrious reader. But there *is* the interpretation and it *does* rest upon the facts, and in this consists the essential value of the work. However critical one may be inclined to be as to the moral theory advocated, the critic must at least admit that the author has furnished him with the best weapons yet available for his own criticism.

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The Argument of Aristotle's Metaphysics. EDITH HENRY JOHNSON. New York: Lemcke and Buechner, Agents. 1906. Pp. 186.

The one hundred and eighty-six small pages of this book contain a synopsis, in lucid English, of the fourteen books of Aristotle's *Metaphysics*. The chief omission is in Book One, which, being historical and well known, does not so much need to figure in a new version of the

'Argument.' Mrs. Johnson has threaded the labyrinth with skill and has disclosed more unity of plan and subject in it than might be found by one venturing in with no Ariadne to guide him. This feat is accomplished not by introducing any personal reconstruction of Aristotle's philosophy or any supplements from his other works, but simply by analyzing the subject of each book and summarizing the arguments in the text, often in words which are an abridged translation of the more important passages. The last two books are reviewed before book 'Lambda,' so that the anticlimax incident to the traditional arrangement is avoided and the boldest and most sublime part of the work is left for the end. Altogether this account of Aristotle's *Metaphysics* seems to be clearer, more direct and more faithful than that to be found in Zeller or in any other available commentator. It should tempt many a reader to turn to the text, and we may hope that it heralds an accurate English translation prepared under the same auspices.

The preface tells us that the author has wished 'to give without criticism a statement of what has appeared to one student the main currents of Aristotle's thought.' But a selective rendering is perforce a sort of criticism, and no such interpretation, with its implied judgments, can hope to satisfy everybody. It seems to me, for instance, that the ideal side of Aristotle's *οὐσία* is as much obscured by calling it 'primal existence' as it would have been by calling it 'substance,' which is the traditional rendering. The danger of misunderstanding could be explicitly removed by a note, such as Mrs. Johnson appends to the word 'cause,' which she retains, explaining that it means 'essentially an answer to a question' or any principle of comprehensibility. Again, when the author comes to Aristotle's astronomical theology, she is at pains to apologize for his polytheism; yet his monotheism is surely just as much a corollary of his physics. He thought all motions needed ideal causes existing first. The cause, where activity was intermittent, might be the 'nature' which, formerly embodied in the parent, might be latent yet compulsive in the growing child. But where definite processess were perpetual, as he supposed those of the heavens to be, the psychic realization of their purpose had to be perpetual too. All organisms were instruments, and every eternal movement had to be the instrument of an eternal life. There was, however, a moral side to Aristotle's theology, a sense for the highest good, which was independent of his physics and of that hypostasis of ideals which his physics involved. A different emphasis in the rendering of book 'Lambda' could easily bring this moral and sounder element to the fore. On the other hand, the explanation of the sense in which the soul is a 'form,' on page 146, seems to me excellent, and calculated to bring out that side of Aristotle's thinking which makes him the most profound as well as the sanest of philosophers.

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Opere Italiane. I.: Dialoghi metafisici. GIORDANO BRUNO. Edited with notes by Giovanni Gentile. Bari: Laterza & Sons. 1907. Pp. xxii + 420.

This volume is the latest contribution to the admirable series of Italian editions of philosophical classics which Croce and Gentile are preparing. While primarily intended for their fellow countrymen, no doubt, the editors probably feel that this particular work will find its way into many foreign bookshelves; for it is the only accessible and up-to-date edition of Bruno's important writings. The old edition of Wagner's is difficult to get and not critical in the modern sense. English and American readers probably resort most frequently, for ordinary purposes, to Lasson's translations in Kirchmann's 'Library.' But Gentile's new edition is so superior in many respects to all preceding ones that it can not fail to become the standard.

A casual examination is enough to reveal three invaluable features; modernized Italian spelling, elaborate cross references and interesting and apparently extensive historical notes. One of the most trying tasks involved in editing Bruno is that of tracing the origins of his highly eclectic thoughts. Gentile has done much in this direction, though how successfully only a long, detailed inspection could show.

The present volume contains the three great metaphysical dialogues; 'La Cena de le Ceneri,' 'De la Causa, Principio e Uno,' and 'De l'Infinito, Universo, e Mondi.' The second volume will contain the moral dialogues. Typographically the book leaves nothing to be desired.

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A Study of the Affective Qualities. SAMUEL P. HAYES. *The American Journal of Psychology*, July, 1906. Pp. 358-393.

This report of Mr. Hayes from an investigation carried on in the psychological laboratory of Cornell University is of decided interest to those students of the psychology of feeling who have followed the Titchener-Wundt discussion and controversy. In this controversy one sees that the very status of the affective element in consciousness—or, perhaps, we had better say, in experience—is undetermined or willfully fixed. Here one finds, however, a clear-cut issue. Here masters of the experimental method in psychology are in fundamental disagreement. Here, also, it seems that one's epistemological, or at least one's individual, presuppositions agree suspiciously well with one's experimental results. Münsterberg, Wundt and Titchener differ quite essentially on this subject of feeling. Reported results from their laboratories differ quite as much. Johnston's experimental study reported from the Harvard Psychological Laboratory¹ suggests strongly that a psychological theory and explanation of the feelings must be some sort of elaboration of Münsterberg's action theory. On the other hand, the bulk of the experimentation relating to the elemental character of our affective consciousness, carried on in Ger-

¹ Volume II. of the 'Harvard Psychological Studies.'

many since Wundt's announcement of his tridimensional theory, clearly indicates, as various critics have frequently urged, that the German followers of their great leader limit their investigations to an accumulation of data which will support his theory of the complex, dimensional and analyzable constitution of feelings. Their general tone would suggest that their attitude is to place the burden of proof on those who do not accept the special tridimensional theory. A third point of view we find supported by the present writer. Mr. Hayes, from Titchener's laboratory, reports results which seem to substantiate unquestionably the Titchener side of the controversy, and to be consistent with the theoretical doctrine of his master. Whether natural or coincidental, these examples can serve to show the delicate task one assumes when he sets out to collect his data, or when he attempts to interpret such data.

Hayes, in his introduction, outlines three stages through which feeling theories have passed. The first is that feeling is an attribute of elementary sensations, but not exactly on a parity with the intensity and the quality attributes. At this stage stress is laid upon its intellectualistic aspect. It functions only as one of the attributes of the essentially cognitive sensation. Secondly, it has been viewed as an aspect of will, having its own intensity and quality differences. It is vaguely connected with the attraction-repulsion character of will acts, and it is viewed as both intellectualistic and voluntaristic. The third stage is reached when feelings are regarded as fundamentally elemental, as independent elements of consciousness. Here appears the conviction, and here issues the stimulus, to accept optimistically the possibility of further analyzing the feeling itself. Feelings are, though apparently ultimate states, analyzable further in the same sense as are color sensations. But, as Hayes says, there is an apparent weakness and a bias in the attitude of those who set out to prove this Wundtian position. He hence attacks the theory of 'mixed feelings,' holding that the natural, traditional, dualistic character (the pleasantness-unpleasantness dimension) of feelings has the right to replace the burden of proof upon the shoulders of the innovators.

The present paper in question reports the introspective evidence, and the author suggests that objective evidence of similar import and of an experimental character is forthcoming shortly, all of which tends to call into question the validity of Wundt's position. The purpose of the investigation, in brief, is to test systematically the validity of any multi-dimensional aspect of feelings. Assuming, since he finds no demurrers, that the *P-U* dimension is undeniably one dimension of feeling, he proposes to test, by the same standard which sustains this universally accepted dimension, the two other dimensions upheld by Wundtian psychologists. If no such additional dimensions can thus be established, by elimination according to our author, the pleasant-unpleasant category remains the fundamental one.

Harmonical clangs are used by Wundt to arouse feelings one of whose prominent dimensional characteristics is the excitement-depression aspect. The investigator hence makes use of these stimulations to arouse the feel-

ings to be studied. Metronome beats are approved by Wundt as instrumental in arousing feelings with a noticeable strain-relaxation dimension. These the investigator likewise adopts. In both divisions of the experiment he takes the 'affective efficiency of these stimuli for granted.' The harmonical experiments extend through a period of six months, and the records embody the results from four observers. The metronome beats were employed as stimulations for two months with three of the same subjects from whom introspection is used in both tests. The subjects are all musical, and all but one are experienced in laboratory experimentation.

The results of the harmonical experiments are as follows. Reporting from each series upon one affective experience only, the subjects find affective judgments for *P-U* easy and natural and apparently ultimate. Those for excitement are rare, those for depression artificial and forced, and those for strain and relaxation either forced or vitiated by inevitable associative factors. Further, depression and excitement are not maximal opposites as on the Wundtian scheme they ought to be. Indeed, the affective factor of all these extra dimensions seems, after all, to be reducible to that of pleasantness-unpleasantness. Likewise the metronome tests, though pointedly given to discover the special strain-relaxation dimension, give results practically similar to those above, all of which tends to show that multidimensional theorists have yet to prove the existence of the additional feeling attributes.

The conclusions are as follows: there is no doubt of the *P-U* dimension on any theory of feeling; there is no evidence of the plurality of *P-U* qualities (though the author qualifies this by mentioning the 'color' of *P-U*, referred to variations of organic reactions); the strain dimension is no new affective quality, since it can be described in muscular terms throughout; for excitement likewise one need invent no new name for an apparently fictitious affective ultimate; and *D* and *R* characters of experience are merely resultant judgments due to accompanying associative factors. In brief, all evidence adduced from this study, according to our author's conviction, unquestionably supports Titchener's ultimate dualistic account, rather than Wundt's tridimensionality.

As the experimenter's avowed and limited purpose is to 'shake pluralists (his term characterizing those who do contend for a multidimensional theory of feeling) out of their dogmatic slumbers,' one should not criticize the study, perhaps, for not taking into account other possible considerations. It occurs to the reviewer, for example, however, that it is not exactly accurate to say, as does our author, that 'no one denies the validity of *P-U* as a feeling dimension.' Mach, in his discussion of this subject, takes just such a position; and several speakers at a recent meeting of the American Psychological Association saw fit to express a hesitating attitude toward the prevailing hazy use of just such terminology. It will be recalled, further, that for Binet also the fundamental feeling opposition is not of the *P-U* type, but rather of the nature of an activity-repose dimension. C. Minneman is inclined to give up the *P-U* hypothesis as not serviceable, in that there are found for them no distinguishing

characteristic physiological symptoms. It is becoming increasingly clear, too, that these aspects of feelings do not correspond to attraction-repulsion reactions. In addition to this, Royce, for example, finds many affective states which do not exhibit the *P-U* dimension, and which seem to be satisfactorily characterizable in terms of his so-called 'restlessness-quietness' dimension. Many others could likewise be cited.

Again, and this seems to be applicable to all experimentation upon feelings, it is inconsistent to take for granted the 'affective efficiency' of any chosen stimulus whatsoever, if one sets out with the purpose of relying exclusively upon introspection. The variability of feeling is great even with unchanging objective conditions. To subject feeling to one uniform test for all observers of varying individual temperaments and changing, inconsequent personal attitudes towards the same stimulus, that is, to accept the questionable point of view that feelings are uniformly constant in the same sense that sensations are, amounts to saying at the outset that feelings behave as do sensations. Their very failure thus to conform to sensation standards of behavior presents the unique problem. They are capricious, as we already know, as compared with the standard behavior for cognitive processes. This seems to be the chief confusion in all psychological literature on this subject.

Some authorities believe feelings in the last analysis to be essentially cognitive, or potentially so, others that they represent unique aspects of the sensation (feeling tone), others that they are independent elements, and still others that the term feeling means always a complex, never a simple, process. Clearly, the position of experimental investigators of this fascinating subject represent different lines of approach. It is, moreover, clear, too, that not all of them have always kept in mind all the possibilities in the progress of their researches. Hence a critic at this stage of this peculiarly difficult problem can scarcely do more than point out other possible interpretations of the presented data. Here, and Mr. Hayes's procedure will serve to illustrate this, more than in any other field of psychological inquiry, the most searching, carefully planned, exhaustive and systematic analytic introspection, and a more complete reliance upon individual data, are essentials for first steps even. In lieu of the admitted inadequacy of our feeling nomenclature, and of the insecurity of the introspective data for those feelings that have been 'measured' for us by experimentalists, the kind of work of which Mr. Hayes's is an example is both eminently pertinent and necessary. The artificial conditions for working with feelings in laboratories present obstacles, but the system and developing plan there possible would seem to assure for such work at any rate a happy supplementation to introspection under natural conditions.

Until there can be adopted some consistent use for the term feeling, controversy and discussion are to a great extent useless. Wundt, for example, seems to have in mind a truly affective universal character of all experience, overlooking which no single experience is adequately described. Others use the word for merely vague sensibility or undiffer-

entiated perceptual stuff. Connected with this we may note a tendency to identify feeling with organic sensations, presumably because both are as yet unanalyzable. Still a third tendency which I seem to find in Mr. Hayes's paper, and also in Titchener, is a disposition to deny an affective character to any phase of an experience which can be described in 'muscular terms.' I do not see, for example, why I can not be excitably *affected* and at the same time have muscular sensations of twitching, etc., which in their character as localized factors of experience remain sensations. If he means, however, that in the act of localizing this muscular activity our excitableness becomes mere awareness of these sensational constituents of consciousness, I can only say that I do not find it so in my own experience. To me it would seem more intelligible to conceive sensation as that element of experience which is localizable, whether external or internal; and feeling that aspect of experience concerning which the thought of localization has no meaning.

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Professor James's Theory of Knowledge. A. K. ROGERS, *Philosophical Review*, November, 1906. Pp. 577-596.

The purpose of this article may perhaps be indicated with a fair degree of accuracy by the query, Is Professor James a pragmatist? Its specific contention is that in so far as pragmatism can claim to be a new philosophy, James has shown himself to be in fundamental disagreement with it, but that he nevertheless gives support to precisely those doctrines upon which this claim is based.

It would seem that there must be a disagreement somewhere among the supporters of 'pragmatism' as to the meaning of the term. James himself has defined it as the doctrine that if a truth is worth discussing it must have practical consequences of some sort. With this view the author finds himself in essential agreement. The newer humanism, however, maintains the more ambiguous proposition that truth *consists* in consequences. As the author contends, the acceptableness of this thesis depends upon the interpretation given to it. So long as there is no intention to predetermine the nature of reality, the proposition may be allowed to pass unchallenged. That the intention back of it is entirely innocent is, however, a matter of serious doubt. Pragmatism claims to be a new departure. But if it is to be 'taken as really a new philosophy the essential point of its divergence from the older view would seem to be this: that reality is actually and in every sense created in the growing process of human knowledge' (p. 579).

This interpretation of the pragmatic principle James refuses to accept. He seems to hold that 'if our own particular thought were annihilated, the reality would still be there, though *possibly* in a shape that would lack something that our thought supplies' (p. 580). Nevertheless, he defends two doctrines which necessitate pragmatism in the objectionable sense. These are (1) that of 'implied existence,' and (2) that all transcendence

is reducible to feelings of relation. These necessitate this form of pragmatism, for they make it not only possible but necessary 'to explain the determinations of psychological experience without going beyond that experience itself' (p. 581).

The doctrine of implied existence holds, for example, that "the number seven is implicit in the experience of the dipper constellation. It is not actual until some human mind counts the stars, but even before the counting the conditions of the result were present. The stars were actually seven, in that they must appear so whenever the question came to be asked" (p. 582).

As the author shows, however, this point of view does not do justice to all the facts. We may explain in this fashion how the experience and the result of the counting are determined by individual experience itself, but we do not discover why the appearance of the stars is such as it is. Or, more generally, this mode of dealing with the question is inadequate to all the facts of novelty and contingency. If the doctrine is to be maintained, it becomes necessary to fall back upon the conception of experience as an absolute system, in which case everything that occurs must, of course, be implied in it in some way. This, however, would be a tacit acknowledgment that the new fact is not necessarily 'seen to be implicit from the human point of view' and, if so, we 'give up all that concretely we mean by an appeal to experience' (p. 583).

So far the presentation is on the whole clear and forcible. The second contention of James, *viz.*, that 'knowledge can be reduced to resemblance which leads to beneficial reaction towards an object' (p. 588) appears to the reviewer to be handled less effectively. Up to a certain point the author professes to be in agreement with James's doctrine of the relation between consciousness and its object. As he points out, there is in ordinary sense-experience no consciousness of a duality between perception and object. Nor is such duality discoverable in our thoughts about objects not present to sense. It also is 'pure' or living experience, being reducible to some sort of image plus the feelings of transition. A different situation presents itself, however, when I begin to reflect, not upon the unperceived object, but upon my previous thoughts about the object, *i. e.*, when my 'knowledge-about' becomes conscious of itself as such. When reflection is instituted upon an experience of knowing, there comes to light an image plus the sense that under certain conditions this image would pass continuously into a more vivid experience. But the culminating stage of the transition is recognized as still in the future. The present knowing and the end towards which it 'points' are held apart within the reflective experience. The knowing experience is recognized as representative, and this fact, according to the author, gives standing-room to the representative theory of knowledge, to which he avows allegiance.

Just how this conclusion follows it is not easy to determine. According to the author's own showing, representation is a function that obtains only between different experiences, and the transition from this to a like

relation between experience in its entirety and a reality beyond can be accomplished only by a *tour de force*. Indeed, it would seem that the substance of the criticism urged against James may in a sense be directed against the author himself. He likewise accepts the starting-point of pragmatic doctrine, but refuses to abide by its complete logical implications.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. December, 1906. *La morale conditionnelle* (pp. 561-575): ADRIEN NAVILLE. - The discussion is inspired by M. Lévy-Bruhl's 'La morale et la science des mœurs.' If we distinguish the obligatory ends of conduct from the means of attaining those ends, the theory of morals is conditional in the sense of being the theory of the best means furnished by reality for the completest possible realization of the ideal ends. *La fonction psychologique du rire* (pp. 576-599): L. DUGAS. - The essence of laughter is to be sought in a quick change of mental attitude. It expresses the nature, mode and degree of impulsive belief. Objective classification of the sorts of laughter is impossible, but subjectively they may be classified, from the way in which the turn of thought takes place, as dogmatic, skeptical and natural. In every case laughter is 'limitrophic,' and marks the meeting-place of the rational and the irrational. *Logique rationnelle et psychologisme* (pp. 600-610): G. H. LUQUET. - In his attack upon psychologism M. Couturat has grossly misrepresented the claims and problems of affective logic (Ribot). Just as logic asks upon what principles cogent demonstration rests, psychologism asks why must correct reasoning conform to these principles. The true province of psychologism is, therefore, the theory of knowledge. *Observations et documents: une illusion visuelle* (pp. 610-615): V. EGGER. - *Revue générale: Les obscurités de la notion sociologique de l'histoire* (pp. 616-644): G. RICHARD. *Analyses et comptes rendus: De Gaultier, Les raisons de l'idéalisme: FR. PAULHAN. Lœb, Vorlesungen über die Dynamik der Lebenserscheinungen: H. DAUDIN. Bouglé, La démocratie devant la science: GASTON RICHARD. Squillace, Dizionario di sociologia: A. L. Revue des périodiques étrangers.*

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NOTES AND NEWS

WE take from *The Nation* for March 21 the following notice of a particularly important addition to the literature of anthropology and folklore: "The third volume of 'Anthropophyteia,' the great work on sexual folklore, just issued, is edited by Dr. Friedrich S. Krauss, of Vienna, the distinguished South Slavic ethnologist; and among the collaborators are such specialists as Achelis, Bloch, Herrmann of Budapest, Pitré, Robinsohn, the late Dr. Obst of Leipzig, and our own Dr. Boas of New York. The edition is limited, for the use of students only. In this most important, and yet most difficult and repellent, department of ethnologic investigation the purpose of the work is to cover the whole field, but with more special attention to Europe, particularly the Balkan peninsula, for which Dr. Krauss is himself our best authority. The scope of inquiry ranges from primitive anthropology to modern—and decadent—civilization, through myth, ritual, song, story and proverb. Among the special topics treated, concerning which it is obviously impossible to particularize, may be noted phallic survivals, supernatural conception, betrothal and marriage customs, sexual hospitality, the *jus primæ noctis*, erotic dances, erotic tattooing, puberty, pregnancy, and childbirth customs and beliefs, love charms and proverbs. Previous volumes have treated of South Germany, Italy, Sicily, Hungary, the Gypsies and the Balkan provinces. The present volume deals chiefly with Elsass, upper Austria, Servia and the Magyars. The illustrative texts are given in Magyar, Servian and German, frequently in dialectic forms, with accompanying glossaries, rendering the work of great value to the philologist as well as to the ethnologist. To the student of civilization the work is a revelation. Many of the myths and customs recorded as still existing, particularly in the Balkan states, have unquestionably come down from remote pre-Christian antiquity, and many others, as ancient in origin and crude in manifestation, are but recently extinct. Indeed, the pervading bestiality of daily life and thought throughout whole provinces of southeastern Europe must be a subject of deep concern to all interested in the uplifting of the race."

THE following note is taken from the second number of *Cænobium*: "Murakami Sensho, the distinguished author of a history of Buddhism in Japan, wished to determine the question [as to religion in Japanese families] by means of a questionnaire. He put the following three questions to the students at the school for girls, Toyo Jogakko: 1. What is the religion of your family? 2. Do you have at home a Buddhist altar or Shinto tablets, or are these articles of piety unknown in your family? 3. Do you recite the prayers morning and evening? The questions were presented to seventy pupils, and to the first question answer was made as follows: 7 Shinto families, 62 Buddhist families, 1 free-thinking family. To the second question the answer was: 2 Shinto altars, 24 Buddhist altars, 38 Buddhist-Shinto arrangements. Five families no longer maintained either cult. The answer to the third question was less consoling. In 38 families the prayers were said in common morning and evening, but in 31 the practise was left to the old people and in 7 it was wholly omitted."

THE University of Iowa announces the following program of public lectures on 'Practical Ethics,' to be given under the direction of the department of philosophy: February 27, 'Food,' Laura Clark Rockwood; March 6, 'Drink,' Elbert William Rockwood; March 13, 'Cleanliness,' Henry Albert; March 20, 'Rest,' Edwin Diller Starbuck; March 27, 'Poise,' George Edwin MacLean.

THE University of Minnesota has been very fortunate in its experience with the study of anthropology. A course in anthropology was offered last autumn by Professor A. E. Jencks, then beginning work in the department of sociology, and it was elected by six students. The course was offered again, the second semester, beginning on February 4, and has been elected by eighty-three students. An advanced course was also offered the second semester which has been elected by eighteen students.

AT Brown University lectures have been given by Professor Josiah Royce, of Harvard University, on 'Provincialism,' and by Professor E. C. Sanford, of Clark University, on 'The Rôle of the Different Senses in Mental Life.'

IN a paper by Munk read before the Berlin Academy of Sciences on January 17, on 'The Functions of the Cerebellum,' the author maintained that the specific function was the more delicate maintenance and control of equilibrium in sitting, lying, standing, walking, etc.

THE first article in *Leonardo* for February is a translation into Italian of the address of Professor William James, entitled 'The Energies of Men.' The article is accompanied by a portrait of the author.

DR. HAROLD CHAPMAN BROWN, assistant in philosophy at Columbia University, has been advanced to the position of tutor in philosophy.

MR. HERBERT H. WOODROW has received the appointment of demonstrator in psychology at Princeton.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE CONTROL OF IDEAS BY FACTS. I

I

THERE is something a little baffling in much of the current discussion regarding the reference of ideas to facts. The not uncommon assumption is that there was a satisfactory and consistent theory of their relation in existence prior to the somewhat impertinent intrusion of a functional and practical interpretation of them. The way in which the functionalist logician has been turned upon by both idealist and realist is suggestive of the way in which the outsider who intervenes in a family jar is proverbially treated by both husband and wife, who manifest their complete unity by berating the third party.

I feel that the situation is partly due to various misapprehensions, inevitable perhaps in the first presentation of a new point of view, and multiplied in this instance by the coincidence of the presentation of this logical point of view¹ with that of the larger philosophical movements, humanism and pragmatism, which resulted in interpreting the logic partly in terms of additional misconceptions of these philosophies, and partly in terms which, even if pertinent with reference to them, were not exactly relevant to the less ambitious logical theory. In the hope that the atmosphere is now more favorable, I wish to undertake a summary statement of the logical view on its own account, hoping it may receive clearer understanding on its own merits.

In the first place (apart from the present frightful confusion of logical theories), it was precisely the lack of an adequate and generally accepted theory of the nature of fact and idea, and of the kind of agreement or correspondence between them which constitutes the truth of the idea, that led to the development of a functional theory of logic. A brief statement of the difficulties in the traditional views may therefore be pertinent. That fruitful thinking—thought that terminates in valid knowledge—goes on in terms of the

¹ 'Studies in Logical Theory,' University of Chicago Press, 1903.

distinction of facts and ideas, and that valid knowledge is precisely genuine correspondence or agreement, *of some sort*, of fact and idea, is the common and undeniable assumption. But the discussions are largely carried on in terms of an epistemological dualism which renders the solution of the problem impossible in virtue of the very terms in which it is stated. The distinction is at once identified with that between mind and matter, or consciousness and objects, or the psychical and the physical, where each of these terms is supposed to refer to some fixed order of existence, a world in itself. Then, of course, there comes up the question of the nature of the agreement, and of the recognition of it. What is the experience in which the survey of both idea and existence is made and their agreement recognized? Is it an idea? Is the consistency ultimately a matter of self-consistency of ideas? Then what has become of the postulate that truth is agreement of idea with existence beyond idea? Is it an absolute which transcends and absorbs the difference? Then, once more, what is the test of any idea qua idea? What has become of the correspondence of fact and thought? Or, more urgently, since the pressing problem of life, of practise and of science is the discrimination of the *relative*, the *superior* validity of this or that theory, plan or interpretation, what is the criterion of truth within present non-absolutistic experience, where the distinction between factual conditions and thoughts and the necessity of some working criterion of their correct adjustment persist? Putting the problem in yet another way, either both fact and idea are present all the time or else only one of them is present. But if the former, why should there be an idea at all and why should it have to be tested by the fact? When we already have what we want, namely, existence, reality, why should we take up the wholly supernumerary task of forming more or less imperfect ideas of those facts and then engage in the idle performance of testing them by what we already know to be real? But if only ideas are present, then it is idle to speak of comparing an idea with facts and testing its validity by its agreement. The elaboration and refinement of ideas to the uttermost still leaves us with an idea, and to common sense and science while a self-consistent idea stands a show of being true in a way in which an incoherent one can not, a self-consistent idea simply *as* an idea is still but a hypothesis, a candidate for truth. Ideas are not made true by getting bigger. But if only 'facts' are present, once more the whole conception of agreement is again given up—not to mention that such a situation is one in which by definition there is no thinking or reflective factor at all.

This suggests that a strictly monistic epistemology, whether idealistic or realistic, ~~does~~ not get rid of the problem. Suppose, for

example, we take a sensationalistic idealism. It does away with the ontological gulf supposed to exist between ideas and facts, and by reducing both terms to a common denominator seems to facilitate fruitful discussion of the problem. But the problem of the distinction and reference (agreement, correspondence) of two types or sorts of sensations still persists. If I say the box there is square, and call 'box' one group of ideas or sensations and 'square' another sensation or 'idea,' the old question comes up, Is 'square' already a part of the 'facts' of the box, or is it not? If it is, it is a super-numerary, an idle thing, both as an idea and as an assertion of fact; if it is not, how can we compare the two ideas, and what on earth or in heaven does their agreement or correspondence mean? If simply that we experience the two 'sensations' in juxtaposition, then the same is true, of course, of any casual association or hallucination. What we still have on the sensational basis, accordingly, is a distinction of something 'given,' 'there,' brutally factual, the box, and something else which stands on a different level, ideal, absent, intended, demanded, the 'square,' asserted to hold good or true of the thing 'box.' The fact that both are sensations throws no light on the logical validity of the proposition or belief because by theory a like statement holds good of every possible conjunction.²

The same problem recurs on a realistic basis. For example, there has recently been propounded³ the doctrine of the distinction between relations of space and time and relations of meaning or significance, as a key to the problem of knowledge. Things exist in their qualitative character, in their temporal and spatial relations. When knowledge intervenes, there is nothing new of a subjective or psychological sort, but simply a new relation of the things—the suggesting or signifying of one thing by another. Now this seems to be an excellent way of stating the logical problem, but, I take it, it only states and does not solve. For the characteristic of such situations, claiming to terminate in knowledge, is precisely that the

² Mill's doctrine of the ambiguity of the copula ('Logic,' Bk. I., Ch. IV., § 1) is an instance of one typical way of evading the problem. After insisting with proper force and clearness upon the objective character of our intellectual beliefs and propositions, *viz.*, that when we say fire causes heat we mean actual phenomena, not our ideas of fire and heat (Bk. I., Ch. II. and Ch. XI., § 1, and Ch. V., § 1), he thinks to dispose of the whole problem of the 'is' in judgment by saying that it is only a sign of affirmation (Ch. I., § 2, and Ch. IV., § 1). Of course it is. But unless the affirmation (the sign of thought) 'agrees' or 'corresponds with' the relations of the phenomena, what becomes of the doctrine of the objective import of propositions? How otherwise shall we maintain with Mill (and with common sense and science) the difference between asserting 'a fact of external nature' and 'a fact in my mental history'?

³ 'Studies in Philosophy and Psychology,' article by Woodbridge on 'The Problem of Consciousness,' especially pp. 159-160.

meaning relation is predicated of the other relations; it is referred to them; it is not simply a supervention existing side by side with them as do casual suggestions or the play of phantasy. It is something which the facts, the qualitative, space and time things, must bear the burden of, must accept and take unto themselves as part of themselves. Until this happens, we have only the continuance of 'thinking,' not accomplished knowledge. Hence, logically, the existential relations play the rôle of fact, and the relation of signification that of idea,⁴ distinguished from fact and yet, if valid, to hold of fact.

This appears quite clearly in the following quotation: "It is the ice which means that it will cool the water, just as much as it is the ice which does cool the water when put into it." There is, however, a possible ambiguity in the statement, to which we shall return in the last paper of this series. That the 'ice' (the thing regarded as ice) *suggests* cooling is as real as is a case of actual cooling. But, of course, not every suggestion is valid. The 'ice' may be a crystal, and it won't physically cool water at all. So far as it is already certain that this is ice, and also certain that ice, under all circumstances, cools water, the meaning relation stands on the same level as the physical, not being merely suggested, but part of the facts asserted. It is not a meaning-relation as such at all. We already have truth; the entire work of knowing as logical, is done. In other words, we have no longer the relation characteristic of reflective situations. Here again, the implication of the thinking situation is of some 'correspondence' or 'agreement' between two sets of distinguished relations; the problem of its nature and valid determination remains the central question of any theory of thinking and its relation to facts and to truth—that is, of any logic.⁵

I hope this statement of the difficulty, however inadequate, will serve at least to indicate that a functional logic inherits the problem in question and does not create it; that it has never for a moment denied the *prima facie*, working distinction between 'ideas,' 'thoughts,' 'meanings' and 'facts,' 'existences,' 'the environment,' and the necessity of a control of meaning by facts, if there is to be any question of truth and error. It is concerned not with denying, but with understanding. What is denied is not the genuineness of the problem and of the familiar terms in which it is stated, but the

⁴ In other words, 'ideas' is a term capable of assuming any definition which is logically appropriate—say, meaning. It need not have anything to do with the conception of them as little subjective entities.

⁵ Of course, the monistic epistemologies have an advantage in the statement of the problem over the dualistic—they do not state it in terms which presuppose the impossibility of the solution.

value of the orthodox intellectualistic interpretation. What it insists upon is the relative, instrumental or working character of the distinction—that it is a *logical* distinction, instituted and maintained in the interests of intelligence with all that intelligence imports in the exercise of the life functions. To this positive side I now turn.

In the analysis it may prove convenient to take an illustration of a man lost in the woods, taking this case as typical of any reflective situation in so far as it involves perplexity—a problem to be solved.* The problem is to find a correct idea of the way home—a practical idea or plan of action which will lead to success, or the realization of the purpose to get home. Now the critics of the experimental theory of logic make the point that this practical idea, the truth of which is evidenced in the successful meeting of a need, is dependent for its success upon a purely intellectual idea, that of the existent environment, whose validity has nothing to do with success but depends on agreement with the actual state of affairs. It is said that what makes a man's idea of his environment true, is its agreement with the actual environment, and 'generally a true idea in any situation consists in its agreement with reality.' I have already indicated my acceptance, in a general way, of this formula. But it was long my misfortune not to be possessed offhand of those perfectly clear notions of just what is meant in this formula by the terms 'idea,' 'existence' and 'agreement' as have most writers on epistemology; and when I analyzed these notions I found the distinction between the practical idea and the theoretical not fixed or final, and I found a somewhat startling similarity between the notions of 'success' and 'agreement.'

Just what is the environment of which an idea is to be formed? *i. e.*, what is the intellectual content or objective detail to be assigned to the term 'environment'? It can hardly mean the actual visible environment—the trees, rocks, etc., which a man is actually looking at. These things are there and it seems superfluous to form an idea of them when the genuine article is at hand; moreover, the way-faring man, though lost, would have to be an unusually perverse fool if under such circumstances he was unable to form an idea (supposing he chose to engage in this luxury) in agreement with these facts. The environment must be a larger environment than the visible facts; it must include things not within the direct ken of the lost man; it must, for instance, extend from where he is now to his home, or to the point from which he started. It must

* See Professor Russell's article, in this JOURNAL, Vol. III., p. 599, entitled 'The Pragmatist's Meaning of Truth.' (It should perhaps be added that this article was in manuscript before I saw the comment of Mr. Schiller on Professor Russell's article, in this JOURNAL, Vol. IV., p. 42.)

include the unperceived elements in their contrast with the perceived, or else the man would not be lost. Now we are at once struck with the facts that the lost man has no alternative except either to wander aimlessly or to conceive this inclusive environment, and that this conception is just what we here mean by idea. It is not some little psychical entity or piece of consciousness-stuff, but is the interpretation of the locally present environment in reference to its absent portions, that part to which it is referred as another part so as to give a view of a whole. Just how such an idea would differ from one's plan of action in finding his way, I do not know. It is a map constructed, with one's self lost and one's self found, whether at starting or at home again, as its two limits. If this map in its specific character is not also the only guide to the way home, one's only plan of action, then I hope I may never be lost. It is the *practical* facts of being lost and desiring to be found which constitute the limits and the content of the 'environment.'

As to the *agreement* of the idea and the environment. Supposing the individual stands still and attempts to compare his idea with the reality, with what reality is he to compare it? Not with the presented reality, for *that* reality is the reality of himself lost; not with the complete reality, for that at this stage of proceedings is the idea itself. What kind of comparison is possible or desirable then, save to treat the mental layout of the whole situation as a working hypothesis, *as* a plan of action, and proceed to *act* upon it, to use it as a director and controller of one's divagations instead of stumbling blindly around until one is either exhausted or accidentally gets out? Now suppose one uses the idea—that is to say, the present facts projected into a whole in the light of absent facts—as a guide of action. Suppose, by means of its specifications, one works one's way along until one comes upon familiar ground—finds one's self. *Now*, one may say, my idea was right, it was in accord with facts; it agrees with reality. That is, acted upon sincerely, it has led to the desired conclusion; it has, *through action*, worked out the state of things which it contemplated or intended. The agreement, correspondence, is between purpose, plan, and its own execution, fulfillment; between a map of a course constructed for the sake of guiding behavior and the result attained in acting upon the indications of the map. Just how does *such* agreement differ from success?

I can hardly hope that this brief account will be as convincing to others as it is to me; its very simplicity and brevity will—such is the reputation philosophy has made for itself—be odorous with the suggestion of hocus-pocus. But before entering upon a more detailed analysis, let me summarize the situation as a whole. The

import of the discussion is that the terms environment, idea and agreement are all of them essentially *practical* terms, denoting distinctive functions or operations, the term 'practical' having no reference to any *fixed* utility, but simply to certain values to be sustained or transformed through an operation.

Every reflective situation has the problem of discovering the intent or meaning appropriate to the management or development of a troubled situation, its pertinency being proved by its capacity to administer the difficulty through the use of the idea as a method or plan. The woods of the scientist and the philosopher, his paths and sign-boards and miscues, the unfamiliar surroundings into which he wanders, his home, his schemes for getting there—all of these differ infinitely in local color and setting from those of the wayfarer in question. But the situation in its diagrammatic features remains the same. Types of agency and response differ according to the different sorts of disturbed organizations, interrupted universes of value, that present themselves; but the category of the problematic; the contrast of the given and the intended; the use of the given to form a conception or hypothetical view of an inclusive situation in which both it and the wanted are contained; the use of this conception as guide to experimental activity in transforming, through degrees, the given into the intended; the use of the results thus obtained to confirm and revise the guiding idea; final verification (if at all) through actively instituting or bringing about a condition of affairs which 'agrees with' the intent of the situation because it fulfills it—these characteristics are found in every reflective process and are found only in a reflective process.

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A FACTOR IN THE EVOLUTION OF MORALS¹

THE study of moral development requires a distinction between what we may call the objective side and the subjective side. Objectively considered, the moral life presents a series of actions, habits and practises. On the subjective side it consists of certain peculiar judgments, feelings and sentiments. Evolutionary writers have given far more attention to the objective than to the subjective side of the subject. Sutherland, for example, shows in a masterly treatise the gradual development of altruistic and sympathetic types of conduct, beginning with the first unconscious devices for the protection of offspring and leading up through the various stages of parental care manifested in fishes, reptiles, birds, mammals, and

¹ A paper read at the meeting of the American Philosophical Association in New York, December 27-29, 1906.

finally in the successive stages of human culture. Sutherland's work demonstrates clearly the tremendous influence which the family relationship has had in the development of morals. The work of Kropotkin supplements this by showing the manifestations and development of mutual aid and social cooperation in the successive stages of animal and human life. But these and similar works are devoted almost exclusively to the objective side of the subject. They show how certain altruistic types of action have come into existence. But if we confine ourselves entirely to such facts as these, to the objective side, we are overlooking the very heart of the problem. There may be much action for the good of others and for the general welfare of the community which is not in any real sense moral. Acts which are the product of mere impulses, even though these be impulses of sympathy, can hardly be called moral, and acts which are the play of mere habit and the tendency to social imitation are no more moral than are the instinctive activities of animals. The truly moral act is one which involves self-determination, some sense of duty, some recognition of personal responsibility. It is this subjective side of the matter, this sense of oughtness, the essence of what is popularly called conscience, of which it seems to me the evolutionists have failed to give us any adequate account.

Instead of looking for the first beginnings of conscience in any subhuman trait, as, for example, the supposed feeling of shame in a dog, I believe we shall find that conscience does not emerge until a considerably later period in human development. Anthropologists have pointed out to us that the primitive savage is anything but the free, independent individualist of the Rousseau school. Primitive life is a mass of inherited usages, fixed tribal practises, a 'cake of custom,' as Bagehot has called it, which so enmeshes the individual that not only does he not dare to violate these, but he does not even think of the possibility of such violation. Primitive crime, as Sir Henry Main and others have taught us, is charged to the group rather than to the individual. The tribe or clan is the responsible personality from which redress is sought if any of its members have inflicted injury, and on the other side it is the tribe or clan that demands reparation rather than the particular individual who may have suffered. Such facts as these suggest the thought that between the individual self-consciousness of the civilized man and the mere consciousness of the animal, there intervened a period of group consciousness. If the individual thought of himself at all, he thought of himself simply as a member of a certain family, tribe or clan. If now this primitive life which was externally a 'cake of custom' was characterized internally by a group consciousness rather than an individual self-consciousness, we can see that conduct was still non-

moral. The conduct of custom may have been very largely altruistic and socially beneficial, but it was lacking in that sense of personal obligation and responsibility which constitutes the very essence of the ethical attitude.

Assuming, then, that in the first stage of human culture the moral attitude was still lacking, where can we find the first impetus to the genesis of conscience? It is the purpose of this paper to show that the rudimentary beginning of moral obligation is to be found in the taboo idea. It was in Polynesia, I believe, that anthropologists first discovered the taboo; at any rate it is from Polynesia that the name has come. But the institution is no mere peculiarity of the Pacific islanders. There is abundant evidence of the same thing in all parts of the world, as such writers as Robertson Smith, J. G. Frazer and Ernest Crawley have shown. That the world-wide presence of the taboo was not more early recognized is due simply to the fact that our knowledge of many peoples and nations is of a period in their development when primitive customs had been so overlaid with later doctrines that they could not be understood until first the key to the problem had been found in the practises of more primitive tribes.

What, now, is the taboo idea? Certain things are regarded as under a ban, they are unspeakably dangerous and must at all cost be avoided, and if, perchance, contact is necessary, then the person becomes infected as by a sort of material contagion. He becomes himself in turn an object of danger and must be tabooed until by some process of purification the infection has been removed and he may once more take his place in human fellowship. The things which are subject to the original taboo are very numerous and vary more or less with different peoples. Sacred places, kings and priests are very generally regarded as taboo. To come in contact with any of these is dangerous. It is only under special conditions and by the use of special rites and ceremonies that contact is allowed. If one enters the sacred place his garments become charged with holiness, so as to be a source of great danger if ever after they are touched. Special garments must, therefore, be prepared, or if the worshipper can not afford these, he may omit his garments altogether. The Bedouin pilgrim, we are told, makes the circuit of the Kaaba either naked or in garments borrowed from the keepers of the sacred place. Originally the shoes were removed before entering the sacred spot, not because the shoes would defile the temple, but because the temple would defile the shoes and they could never after be put to common use. In some tribes the king is believed to be so supercharged with the holy infection of taboo that even anything that he may look upon becomes infected, and therefore taboo. An

umbrella must be carried over his head so that he may not cast his eyes upon the orb of day and taboo it. His food is tabooed, and instances are on record where some common man having inadvertently partaken of the remains of a royal meal, on hearing of his crime, soon died of fright. More widely extended, however, than such taboos as these, are those against contact with blood, the newborn child and its mother, and a corpse. These seem to be almost universal objects of taboo the world over. The cases mentioned would seem to illustrate two broad classes of taboos. Things too sacred to touch, on the one hand, and things too impure to touch, on the other. But in the primitive mind these conceptions, which are so widely apart in modern thought, seem to have been one. The sacred and the accursed, the holy and the unclean, are one and the same to a primitive mind, and even in such late languages as Hebrew, Greek and Latin we find words with these, to us, double meanings. The Latin *sacer* and the derivatives of the Greek root *ag* illustrate this. The Hebrew word *tame*, which is usually translated unclean, does not mean physically foul, but, as Robertson Smith² tells us, 'is a ritual term and corresponds exactly to the idea of taboo which is found among all early peoples.' The impurity which characterizes the taboo idea has little or nothing to do with our notions of cleanliness. "The Kaffirs," Tylor tells us in his 'Primitive Culture,' "who will purify themselves from their ceremonial uncleanness by washing, are not in the habit of washing themselves nor their vessels for common purposes, and the dogs and the cockroaches divide between themselves the duty of cleansing the milk baskets. . . . Medieval Tartar tribes, with conscientious scruples against bathing, have been found to pass through fire for purposes of ceremonial purification" (II, p. 434).

While the taboo impurity is not dirt in our sense, still less is it a merely spiritual or moral state of the person. It is a sort of contagious matter that can be washed or burned away or transferred to another. Westermarck³ gives numerous instances where sin is regarded as an infectious matter, but the 'sin' in these cases has little of the moral sense that we attach to it. It is simply the taboo infection, although it is doubtless the nearest approach to the idea of sin that the peoples in question possess. "In one part of New Zealand a service was performed over an individual by which all the sins of the tribe were supposed to be transferred to him; a fern stalk was

² 'Kinship and Marriage in Early Arabia,' p. 307.

³ 'Origin and Development of the Moral Ideas,' I., p. 52. The author gives examples from the Tahitians, New Zealanders, Peruvians, the Iroquois, Badagas of India, Utch-Kurqan of Turkestan, ancient and modern Hindus, Persians, Greeks, Hebrews, Arabs, Moors, Chinese and Siberians.

previously tied to his person, with which he jumped into the river, and then unbinding it, allowed it to float away to the sea, bearing their sins away with it" (Tylor).

At a stage of theological development such as we find among the Hebrews when the Levitical law was formulated, the taboos are regarded as commands of the Deity, but this is simply a later explanation of long-continued customs whose origin and the reason for which had been forgotten. Customs and practises may long continue after doctrines and theologies have been changed.

A comparative study and analysis of the taboo idea in its more primitive manifestations seems to point to some such origin as this. Earlier than any organized religion, earlier possibly than animism itself, men were confronted by mysterious dangers. In the absence of all knowledge of natural law, whatever was unusual or in any way abnormal, whatever was not perfectly obvious, must have appeared as mysterious, perhaps vaguely supernatural, and the mysterious would early have associated with it anticipations of danger, feelings of fear. For the civilized man the vital phenomena of birth and death are mysteries,—how much more mysterious must they have seemed to the untutored savage! What more natural than that the early man should instinctively regard such mysteries as dangerous, and so far as possible to be avoided; and if he must remove the corpse of his wounded companion, and his hands and weapons are stained with the blood, the mysterious vital fluid, he would seek to escape the danger by washing off the stains. The visible stain in some cases would easily suggest an invisible stain in others. We do not need to assume any primitive instinct of cleanliness, nor any *a priori* notions of sanitation, but given these mysterious dangers to be avoided and the fertile power of association unguided by any controlling knowledge of natural law, and we have all the conditions necessary to explain the origin in human consciousness of a categorical imperative. This imperative too was enforced by sanctions both human and divine. Not only the individual's own fears, but the fear of the community that the dread infection might be shared, demanded the most absolute observance of the taboo. The content of this primitive imperative may be quite unethical or only accidentally so. It has little or no connection with hygiene and sanitation, but it is in form a genuine sense of oughtness.

Being ethical in form and at the same time non-ethical in content, it affords exactly the stepping-stone, the missing link, that we need in order to bridge over the chasm between the non-moral and the moral.

The explanation of the taboo just suggested avoids the difficulties into which many careful students of the subject have fallen. Tylor

says: "It is the plainest proof of the original practicality of proceedings now passed into formalism, to point out how far the ceremonial illustrations still keep their connection with times of life when real purification is necessary, how far they still consist in formal cleansing of the new-born child and the mother, of the man-slayer who shed blood, or the mourner who has touched a corpse."⁴ Yet in spite of this evidence of practicality it is only a few pages farther on where Tylor mentions the uncleanly Kaffirs. My theory of the dread of the mysteriously dangerous avoids any assumptions as to primitive ideas of cleanliness. Jevons in his 'Introduction to the History of Religion' says that the taboo can not have been derived from experience since it is prior to and even contrary to experience, but that it is a primitive sentiment, an inherent tendency. . . . "The essence of taboo is that it is *a priori*, that without consulting experience it pronounces certain things to be dangerous" (pp. 85, 87). The theory which I have advanced adequately accounts, I believe, for the foundation of the idea without the assumption of any *a priori* intuitions. It is an explanation which accords with a reasonable view of primitive psychology. It shows us how a being with an intelligence a little greater than that of the higher animals, and therefore more sensitive to hidden dangers, would develop out of its actual experiences a quasi-moral attitude.

The influence of early ceremonial purifications on the development of religious ritual has long been recognized. We can see now, I think, how this same factor has had an important influence on ethical development. This influence has been, as I have pointed out, mainly on the side of form. It has been the instrument of first establishing in the human mind a sense of oughtness, a feeling of absolute value strong enough to overcome powerful impulses and appetites. But as the taboo idea has developed it has had some influence too on the objective side, on the side of content. Herbert Spencer in his 'Sociology' recognizes the influence which the taboo idea has had in developing respect for property rights. Crawley has shown in his great work 'The Mystic Rose' the influence of the taboo idea on the development of chastity and marriage. It is evident that the taboo against blood and corpses must have been a powerful influence in developing respect for human life. Farnell has shown how the fear of infection in the community from the impurity of the shedder of blood may have led to that important legal step by which crime ceased to be regarded as a mere offense against the injured party, but as an offense against the social body.

J. G. Frazer says: "It subserved the progress of civilization by fostering conceptions of the rights of property and the sanctity of the

⁴ 'Primitive Culture,' II., p. 429.

marriage ties—conceptions which in time grew strong enough to stand by themselves and to fling away the crutch of superstition which in earlier days had been their sole support. For we shall scarcely err in believing that even in advanced societies the moral sentiments, in so far as they are merely sentiments and are not based on an induction from experience, derive much of their force from an original system of taboo. Thus on the taboo were grafted the golden fruits of law and morality, while the parent stem dwindled slowly into the sour crabs and empty husks of popular superstition on which the swine of modern society are still content to feed.”⁵

Great as may have been the influence of the taboo in developing respect for property, marriage and human life, its essential ethical value was in giving the first impetus to the birth of that sense of oughtness which has made man a responsible moral being.

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FEELING ANALYSIS AND EXPERIMENTATION¹

THERE is nothing new in decrying the unsettled state of this psychological problem, nor is this necessary. What is called for is a clear statement of the present status of the problem, and the possible lines of departure from traditional methods in the future, if there are any.

In modern psychological literature several phases of this subject present themselves to us, *viz.*, its particular prominence, the theoretical implications this emphatic consideration of the subjective has for psychology as a science, the evident shortcomings or oversights in recent analysis and experimentation, the nature of the results of experimentation and reported investigation to date, the peculiar difficulties presented in a study of the affective processes, and the most profitable suggestions one may adopt as methods of dealing with the problem.

As to the relative importance in psychological interest of the affective phases of consciousness, to which the term feeling should be strictly limited, nothing need be said. Titchener's World's Fair address fully emphasizes this, and President Hall has observed for us that the prominent place occupied in turn by the intellectual and by the volitional is giving place to feeling, 'which is now on the docket.'

⁵ Encyclopedia Britannica, article on 'Taboo.'

¹ Paper read at the meeting of the American Psychological Association, New York, December 27-29, 1906.

Second, the inclusion of subjective elements of experience in such a way as not to vitiate their real subjective character is important enough to have become one of the self-imposed burdens of all the speakers upon psychological topics at the World's Fair Congress. Cattell makes liberal provision for the inclusion of whatever concerns the subjective as well as the strictly phenomenalist factors of experience. Indeed, it seems to most of the speakers that the psychological boundaries have been too narrowly set, thereby excluding from adequate treatment the affective elements. Structural psychology is barren of further results because it analytically views consciousness only in cross-sections, is the view of Baldwin. Psychology must rather be the interpretation of the genetic movement of the entire thought content, its origin, motive, object and goal—a point of view impossible for psychical atomism. To Höffding, the overvaluing of the results of the analytic, artificial isolation or transformation methods has naturally led to an undervaluing of the emotional—to a false view of emotions as mere resultants of sensations and ideas. For him the voluntaristic or appreciative attitude, by which alone we may do justice to the feelings, must more and more become the main point of view for psychology. Ward sees the same danger in the modern tendency, and decries the incomplete presentationism, which can not see in experience more than phenomena. The subjective factor is not a datum, and hence the purely analytic method falsifies experience, and feeling is transformed out of itself to be explained by a set traditional sensation standard. *Versus* Münsterberg, the feeling of activity must fall within psychological territory; *versus* Lipps, it is not a transcendent reality, a presupposition to be accepted but not dealt with by the psychologist; and *versus* Royce, it is in essence such as not to be regarded as explainable on the basis of a tropism. The whole subjective phase of mind is parodied by forcing it into mental chemistry. Indeed, the nature of the ever-subjective demands a new and enlarged definition of psychology, and a criticism of the atomistic theory. So Titchener emphasizes the need of a better psychology of feeling. He sees very strict limits, however, for dealing with any affective process without involving ultimate categories of feeling, points out the unexplored range of organic sensations in this connection, doubts the ultimate success of instrumental devices for differentiating and recording the closely interwoven and interdependent organic reactions, and suggests the modification and expansion of the impression method. For Calkins neither organic and kinesthetic factors nor the various possible bodily attitudes are sufficiently numerous adequately to describe the affective states, which hence must be conceived as affections of a self. In brief, it seems that feeling is the dark chapter still, and

that it is not freed from epistemological and ethical considerations as are sensational elements. There is no agreement as to whether it can best be conceived of as an independent element, as an attribute of sensation or as a complex process. It is the something left over for James, the invariable subjective for Wundt, Washburn's unanalyzable and unlocalizable element, Mach's as yet vague un-referred organic sensation, Schafer's common sensation, Ward's feeling of activity, Calkins's affection of an active self, or Titchener's process, not an element. It is the same thing somehow for all of them, whatever it is.

The physiological concomitant processes to which it should correspond or with which it should be identified are numerous, such as James's kinesthetic sensations, Lehmann's assimilation-dissimilation process (Verworn's 'Biotonus'), Wundt's internal complex, Campbell's chemical action of peculiar elements in blood, Putnam's temperature changes, Münsterberg's direction of outgoing current, Ribot's normal or pathological nervous action, Baldwin's consideration of its genetic origin, W. McDougall's doubtfully suggested probable cooperation of all the active processes in all the nervous substance, in opposition to the highly specialized and localized nervous processes for sensations, or, finally, the view that feelings differ in all the intricate ways in which delicate coordinated adjustment to complex situations can take place. Hall and Ribot emphasize the important light which may be thrown upon the subject by a thorough examination of exhibitions and records of feeling expression in folklore, in literature of passion and in animal, child and abnormal life. In this whole class of theoretic discussions there comes the conviction of the lack of reliance upon secure and assured introspective interpretation. A clear identification of or distinction between sensations and feelings is not vouchsafed the reader.

In the experimental field investigation of late has been, perhaps unfortunately, almost exclusively restricted to the limited task of establishing or of overthrowing Wundt's tridimensional theory, which itself rests upon questioned introspection. On the whole the results here seem unpromising and not sufficiently definite either to offer future promise for this method or to throw fresh light upon the nature of feeling. Some conclude that it is established, others that it can not hold, none furnishes conclusive evidence either way. The evident mistakes are the following: untrained observers; scant introspection; working with vague, mixed and faint feelings; forcing a theory; oversight of the independent variation of feeling; identifying it with sensations; relying upon a limited range of objective stimulation the affective efficiency of whose stimulus is unwisely taken for granted; and by treating feelings as definite sensations,

looking for definite sensory nerves and sense-organs, etc.; or, again, taking for granted that organic sensations are the basis, conceiving feeling as vague cognition and hence overlooking its own peculiar definiteness or vividness even when cognitive vividness may be at a minimum.

The results are chiefly negative. Even for P-U reactions records show great individual differences, perhaps suggesting that even in individual history kinds of reactions vary with the individual to a much greater extent than is the case for sensation reactions whose feeling tone is negligible.

Perhaps the most hopeful phase of the situation is that the peculiar difficulties here presented for the psychologist are receiving more definite recognition and more concise statement. These conditions universally agreed upon, future investigation can proceed more securely and different lines of approach will meet with more sympathy. Some of the explicit difficulties recognized are the following. First, introspective notes upon which experimentation has been based are unreliable and not exhaustive, but capable on the whole of different interpretations. This is due chiefly to the paucity of feeling nomenclature, but also partly to lack of training on the part of observers. Second, there is undue regard for possible individual differences because it is unwittingly taken for granted that feelings act as do sensations. Third, feelings attach differently to the same sensations at different times and hence, if attributes of sensation at all, they are certainly not on a par with intensity and quality attributes. Fourth, feelings, having this 'independent variability,' can be *particularized*, but not *characterized*, by any constant reference to a sensational substrate, as no sensation can be said to have a given constant feeling. Fifth, feelings, attaching either to sensations or to complexes, are hence more numerous than are sensation elements. Sixth, feelings have qualitative relations to other feelings, whereas this is not true of separate and disparate sensation systems, suggesting that thereby the feeling element is the effective factor in association. Seventh, again, *versus* sensation, several feelings may, and always tend to, fuse into another equally elemental feeling. Eighth, they can not be marked off by a definite physiological stimulus and can not exist independently of sensational elements. And lastly, since they can not be attended to for themselves as can sensations, introspection here is most difficult, and so far has not been sufficiently systematic as to be reliable. That they are subjectively analyzable seems, however, to be the important element in Wundt's doctrine which has intensified the interest in this peculiarly difficult subjective phase of experience.

In consideration of the facts,—that feelings are immensely com-

plicated from their genetic origin, that they are characterized by independent variability even in the individual, that they seem to have a more pervasive neural basis, that the motor counterpart is dependent upon the temporal order and prominence established in the type of psychophysical organism concerned as these adjustments to inner compulsion are acquired, and finally, that there is practically no limit to variety and complexity of purposive motor adjustment,—it seems most profitable to describe feelings in terms of bodily attitudes, and to discover these by prolonged and systematic individual introspection. No dimensional theory can be established by objective tracings which neglect other bodily factors which seem to the observer to have to do with the experience in question. The P-U dimension is inadequate, but other dimensions have not yet secured the approval of those who depend upon subjective analysis. It seems here that experimentation has gone on in disregard of reliable definite introspection, as most of the experimenters themselves admit. It seems on the whole that to feeling should be ascribed its own vividness, quality and intensity, and that this vividness, for example, is different in kind from sensation vividness. In short, that kinds of coordinated response, not peculiarity of sensory factors, should form the groundwork for the physiological psychology of the feelings. The general groupings could be in terms of *regularity* of movements involved, the *rate*, the *ease*, the *ponderous*, *heavy*, *obstructed character*, the *quick collapse*, or *calm repose*, etc.—all differing, not in particular localization at all, as in the sensation standard, but rather in the kind or purposive character of the response characteristic of the habitual adjustments of the particular individual or group of individuals of like temperament and responsiveness.

The modern tendency to retract our former attitude of exclusiveness as to what shall constitute one's description and explanation of the various constituents of experience seems to me to offer welcome leeway here. Introspection invariably reveals intent as well as content in any given state, and we do violence to our innate sense of actuality when we ignore the phases which have no content elements or characteristics. The actual difference, always observable between sensations and the accompanying feelings concerning these sensations, as Wundt has always contended, must be kept in mind by the psychologist. He is concerned with real experiences, which are forever more than mere sensations. If then this workable distinction be adhered to, it would *a priori* seem plausible that our classification and physiological description of these affective elements need not be strictly after the manner of our sensation description. Sensations we specialize (auditory, visual, etc.) and localize. Experimentation would seem to show (although, indeed, I do not think we need its

evidence) that feelings can not thus be dealt with satisfactorily. Feelings are such by their very nature that they must be appreciated, interpreted, characterized. Even the successful localization of them (though this is manifestly irrelevant) in certain invariably occurring bodily processes would not suffice as a description of them *as affective elements*. The number of possible bodily attitudes is, however, quite as unlimited as the number of sensory factors. The *expressive* character of feelings would not be ignored if they should be classified and physiologically described in terms of the various kinds of coordinated adjustments which take place. If the content and intent aspects exist, and hence justify this distinction between the elements to be accounted for, this sort of procedure seems necessary. Thus, the content aspect of sensation being referred to the sensory, and the subjective or intent aspect of feelings in experience being referred to the motor processes exclusively, we have the basis for describing the two elements in a way which recognizes their independent variability.

I am aware that this may seem an attempt to revive the feelings of innervation long since discountenanced. I do not mean this at all. The kinesthetic imagery constituting such states, to which the term 'feelings of innervation' has been wrongly applied, is of a sensational (cognitive), not of an affective character, and should not be called feeling in any case. I feel strongly that the essentially subjective should be described, but as strongly that it should not be forced into the descriptive categories devised and suitable for the purely cognitive aspects of consciousness.

Finally, from what is implied in all the above considerations, I feel inclined to agree with Ward, Binet and, in one respect at least, with Mach, that the pleasant-unpleasant dimension as a basal category of feeling is unfortunately chosen. Ward's feeling of activity is a deeper principle, especially when we consider that pure attraction and repulsion reactions, upon which supposition we classify our feelings into pleasant and unpleasant ones, never literally occur. None of our actions are purely innervations of flexors nor of extensors. On such a classification scheme, then, we have a theory which, if accepted literally, as the critics of Münsterberg (misinterpreting, however, his action theory) have pointed out, leads to absurdity.

Experimentation on the whole has looked for characterizable types of reaction to feelings where most obstacles to their discovery are presented, *viz.*, in the respiratory and circulatory reactions. It seems that one should reasonably expect to find and to be able to characterize and classify more intelligibly those incipient or pronounced reactions to affective states which occur in our voluntary

rather than those which may occur in our involuntary system. I may be mistaken, but it seems that for most experimenters their sublime faith in the pulse or volume curve's revealing to us the kinds and types of feelings is partly due to a failure to consider this very expressive or affective character. They seem to trust to fortune that somehow organic sensations, or 'common sensations,' and feelings are identical. On the other hand, the tentative scheme recently offered by Bailey² does not make clear to me that there is any distinction between feeling and sensation. 'Kinesthesia,' 'cenesthesia' and 'somesthesia' are terms for bodily activities to which phases of feeling states can be referred. As I understand the author, however, this '*melange* of sensibility' which he is describing has no particular reference to feeling as the affective as distinguished from the sensational factor of experience. The Wundtian use seems to me true introspectively, and an indispensable consideration, in danger of being overlooked even by those who adopt Wundt's own method of experimentation.

My method of introspection may be stereotyped, and I may be guilty of uttering intrinsic absurdities, but the conviction above set forth is strong, that feelings, to be described, must be described by bodily attitudes or incipient tendencies to adjustment which in some way characterize the feeling experienced at the time. I am guilty of the further heresy of not believing that so-called organic reactions promise as much as do skeletal reactions toward a future workable classification of feelings. Further still, I do not see the intrinsic absurdity in believing that feelings can not be localized, nor confined to nor connected with organic sensations only, nor that the same structural reference must be used for different persons who experience the same kind of feeling. For example, different persons may employ different sets of muscles to express the emotion of joy. The kind of coordinated adjustment need not differ, though the localization, which is immaterial, may. I have tried to give more detailed reasons for this general point of view, however, in another place.³

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REVIEWS AND ABSTRACTS OF LITERATURE

An Introduction to Logic. H. W. B. JOSEPH. Oxford: The Clarendon Press. Pp. viii + 564.

This book is professedly an introductory work and intended for beginners. It would seem to the average reader to be exceptionally unfitted

² This JOURNAL, Vol. III., p. 708.

³ 'Harvard Psychological Studies,' Vol. II.

for such purposes. The author has attempted to escape the reproach of dryness, which is proverbial in books of this character, by introducing controversial matter. Something may be said for such a method, but there are serious objections to it, for this subject at any rate. In the first place, it puts most emphasis upon disputed points, whether they are of the first importance or not. Again, in the work before us, a good many of the discussions are intricate and it is doubtful whether many of them would have much interest for the student. Most of them would be interesting to one who knew something about logic, but as a means for getting him interested it leaves almost everything to be desired. It would be much sounder psychologically to utilize existing interests than to try to create new ones which would have little intrinsic value for the average student. If the beginner can be made to see that logic has some value in solving problems which really exist, there is some hope of getting him interested, but to recommend it to him as a means for understanding disputes which do not concern him is seemingly a waste of time and energy. It is hard to see how controversial discussions can establish a right to very much attention in an introductory work.

Some notion of the extent of the discussions of a few points in this book may be indicated by the fact that forty-four pages are devoted to the predicables, twenty-two pages to intension and extension, eighteen pages to the reduction of the imperfect syllogistic figures. The more abstruse discussions are usually so separated from the rest as to be easily omitted, but even then these questions are given a disproportionate amount of attention.

One prominent feature in this book is the constant reference to Aristotle with a view to the correction of logical tradition. On many points his interpretation of Aristotle is at variance with tradition; in such cases his reasons are usually stated clearly and concisely. By way of exception may be noted his translation of the name of the eighth category, $\xi\chi\sigma\iota\nu$, as 'state' instead of the more usual 'possession.' The latter is, no doubt, inaccurate, but the former calls for a justification which the reviewer failed to find in the book. It is true, the author prints in parallel columns the traditional Latin table wherein *habitus* corresponds to $\xi\chi\sigma\iota\nu$, but that is certainly not sufficient justification for the use of 'state.'

Another interpretation which might be disputed is that in which he represents Aristotle as making the distinction between universal and other judgments one of quality and not one of quantity, though he does admit that Aristotle often lays stress on the quantitative implications of the contrast between particular and universal judgments. His interpretation supports the contention that a logical whole is not a collection of individuals and has certain obvious consequences with regard to the doctrine of the syllogism.

Another noteworthy point is his emphasis on the Aristotelian list of the predicables, *definition*, *genus*, *differentia*, *property* and *accident*, as against the later substitution of *species* for *definition*. The extended discussion of the predicables is one of the most interesting in the book, but it is not in place in an elementary work.

These few examples must suffice to suggest his treatment of Aristotle. His position on the main questions of logical doctrine is indicated by the names of those to whom he acknowledges indebtedness, Sigwart, Lotze, Bradley and Bosanquet; and as he is writing an introductory book he makes few attempts to break new paths. In the main he is in agreement with the conclusions drawn by those who follow these writers.

He is emphatically opposed to what he regards as excessive formalism in logic, to the view that would 'exclude from logic any consideration of forms or modes of thinking which are not alike exemplified in thinking about absolutely every subject.' His later contention that 'so intimately one are the differentia and the genus that though we refer different species to the same genus, yet the genus is not quite the same in each,' is of a piece with this. Space does not permit a detailed discussion of the many points he raises, but a few other characteristic positions may be noted. One of them appears in his treatment of the negative, as opposed to the view represented by Keynes, for example; he holds that the negative has no meaning at all if it has not some positive meaning. The negative term he regards as legitimate when the positive term is attributive, but a term that goes beyond the 'universe of discourse' (which phrase he pretty consistently avoids), a term which is infinite, he regards as a mere figment of logic. Keynes would reply that you give it a meaning in the act of denying its meaning.¹

From the conclusion adopted by the author follows his objection to the representation of the law of excluded middle by the form 'everything is A or not- A ' and the limitation of the validity of obversion to cases in which not- y has a positive meaning. Like Sigwart he reminds us that if not- y is quite unlimited in range and includes everything whatever except y , it will not follow that because x is y it is not also not- y .

As might be expected in view of his opposition to 'excessive formalism,' he does not include a treatment of symbolic logic. Whatever his own position, it would seem to be incumbent on the writer of an extended introduction to include some discussion of so important a subject. The logic of relatives is also neglected. Only one third of the book is devoted to induction, and the treatment of fallacies is relegated to the appendix.

The book as a whole is well knit together and certainly not without value, but it can not be recommended as a text-book for beginners.

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The Recitation. SAMUEL HAMILTON. Philadelphia: J. B. Lippincott & Co. 1906. Pp. 369.

This book, as stated in the author's preface, "is neither a profound nor an exhaustive treatise on the recitation. It is only a series of easy lectures on the subject prepared for young teachers." While there is little need in view of the nature of the subject for profound treatment, it is a question whether there is sufficient justification at present for a book which does not attempt to cover the subject comprehensively. This may

¹ 'Formal Logic,' p. 54.

be attained within the limits of a volume of the size of the present by omission of much of the pedantry of useless distinctions and definition, which, rather than profundity, has been the bane of such discussions, and which the present author has not wholly escaped. The term recitation is, for example, in part thus defined. "The recitation is not a place. It requires a place, but it is in no sense a synonym of class-room. It also requires a period of time, yet it is not that period. It is not a place or a period, but rather a process or an exercise in which certain ends are accomplished."

The discussion, in the chapter on 'General Method in the Recitation,' of analysis, synthesis, deduction and induction, of objective and subjective, empirical and rational methods is an example of another sort of a treatment which must prove of little value to the class of readers for whom the book is intended. A purely formal and schematic explanation of the meanings of the terms will not secure the use of the methods suggested. The same criticism will apply in a somewhat less degree to the presentation of the 'question,' 'Socratic' and 'topic' methods, and to other parts of the book. Concrete illustrations of the use of methods in actual presentation of subjects rather than statements of what the methods are, would seem more likely to enforce their practise.

The first part of the book treats of the purpose and essentials of the recitation and the art of study; the second part, of the five formal steps of general method; and the third and last part, of the more specific problems of individual method, the use of text-books, oral and written work, English, etc., in the recitation.

In the discussion of many of these subjects, the book will well serve the purpose the author intends as a 'guide' or manual of principles and precepts which young teachers of simply high school preparation need, and it is for this class of teachers the author has especially written. In its form of presentation and preparation the book is adapted to these readers. It is clearly written, and made accessible by marginal topics and synoptical summaries and outlines.

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Youth: Its Education, Regimen and Hygiene. G. STANLEY HALL. New York: D. Appleton & Co. 1906. Pp. x + 379.

Vybrané stati pedopsychologické a pedagogické. G. STANLEY HALL. Edited, with an introduction and notes, by Frantěšek Čáda. Prague: Dědictvi Komenského. 1906. Pp. xvi + 199.

The first volume is a republication in condensed form of a half dozen of the eighteen chapters of President Hall's 'Adolescence,' subdivided into eleven chapters, with an added chapter (pp. 324-366) on moral and religious training. The chapter headings of the new volume are: 'Preadolescence,' 'The Muscles and Motor Powers in General,' 'Industrial Education,' 'Manual Training and Sloyd,' 'Gymnastics,' 'Plays, Sports and Games,' 'Faults, Lies and Crimes,' 'Biographies of Youth,' 'The Growth of Social Ideals,' 'Intellectual Education and School Work,' 'Education of Girls,' 'Moral and Religious Training.'

A valuable glossary of seven pages has been added, and this is a valuable and necessary supplement to the larger work as well. The book has been more carefully proofed and the bibliographic references made more complete than in 'Adolescence.' Good judgment has characterized the selection and condensation; and normal schools and teachers' classes, outside of the preferred geographic zone, are certain to find it a useful book, if they can get hold of it.

That President Hall has a large European following is apparent to readers of foreign educational reviews. Many of his American essays have been translated and published in a half dozen Continental languages. A couple of years ago Professor Joseph Stimfl brought out in German a comprehensive volume of President Hall's essays, with the title 'Kinderpsychologie und Pädagogik'; and now Professor Frantěšek Čáda, of the University of Prague, introduces him to Bohemians in a neat little volume in the Czech. This volume includes translations of the following papers: 'Notes on the Study of Infants,' 'Contents of Children's Minds on Entering School,' 'Some Aspects of the Early Sense of Self,' 'Children's Lies' and 'An Ideal School Based on Child Study.' Professor Čáda, who is the editor of *Pedagogické Rozhledy*, a high-grade Czech review, has added to the translation of the five essays an altogether discriminating introduction on the child-study movement in the United States.

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Tendencies in Child and Educational Psychology. M. V. O'SHEA. *Psychological Bulletin*, November 15, 1906. Pp. 357-363.

According to Professor O'Shea, we are the only nation which is alive as a nation to the vital questions raised by child study and educational psychology. Although there are notable exceptions, the foreign countries are devoting themselves mainly to 'working out traditional educational doctrines in the most economical and effective way,' while we are endeavoring to treat education as 'a phase of biological and psychological science.' For example, instead of considering children as miniature adults and therefore in themselves not worthy of separate study, we believe them to be very different from adults, physically and mentally, in interest, attention and impulse, and therefore offering definite problems for study.

The author points out three changes which have taken place in the methods of investigation in this field. In the first place, the syllabus method of study, in which 'results' were quickly reached and often rashly published, has given place to the more deliberate, rational method of extended research. In the second place, the method of observation of an individual child for long periods of time, instead of the study of large groups of children for brief periods, is gaining in favor, as evidenced by the books of Chamberlain and Major. In the third place, there are fewer teachers among the investigators than formerly, and consequently the results are more likely to have a scientific value, in that they

are not made, 'though always unconsciously, for the purpose of getting a respectable argument to support practical attitudes.'

The reviewer does not quite agree with Professor O'Shea that the method of the observation of individual children is more productive of significant results than the studies of children *en masse*. If one could study enough children as carefully and in as much detail as Major has done for one child, the results would be far better than any gained by studying different groups. But this is impossible; and as the development of an individual child is so largely influenced by heredity and training, a knowledge of his development would not advance very much our knowledge of children in general. Kirkpatrick's excellent book, 'Fundamentals of Child Study,' and Rowe's 'Physical Nature of the Child,' are written from this point of view.

In the field of educational psychology, Professor O'Shea believes that the tendency at present is to leave the physiological, philosophical and logical modes of attack and to treat the problems of education much as we do those in child study, namely, from the standpoint of dynamic psychology and actual schoolroom practise: to leave the classifications and definitions of formal psychology and to encourage the students 'to go straight to the schoolroom and study in the psychological spirit the reactions of pupils upon various studies and methods'; to leave the study of the nervous system as the basis of mental activity to physiological psychology and to emphasize instead schoolroom hygiene. These changes are demonstrated by the books which are now popular, such as Bagley's 'The Educative Process' and Thorndike's 'Principles of Teaching.' The author feels that we are not ready as yet to apply the methods of exact science to educational problems, as was suggested in Thorndike's 'Educational Psychology.' He thinks that such accurate, quantitative measurements are of little practical help to the teacher and that such a method must be purely supplementary. Professor O'Shea notes the point that Thorndike in his 'Principles of Teaching' deserts this method entirely and relies upon the method of observation, but it should be remembered that this is an elementary text-book, while the 'Educational Psychology' is written for advanced students.

The author says that the chief question to be answered by educational psychology is, "How will the individual most economically and effectively make the adjustments which he is expected to make in his arithmetic, his geography, his grammar and all the rest?" The reviewer feels that all through his article Professor O'Shea has emphasized the key-note in the situation with regard to these two subjects, namely, developing human nature.

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On Floating Ideas and the Imaginary. F. H. BRADLEY. *Mind*, October, 1906. Pp. 445-472.

This article is divided into three sections, dealing (I.) with the existence of floating ideas, (II.) with the difference between the 'real' and

the 'imaginary,' (III.) with the relation between imagination and play, together with the distinction between play and earnest.

I. The existence of floating ideas is denied. The apparent plausibility of their existence is said to be based upon a misconception that reality is tested by connection with my felt waking body, and that beyond this world of fact there floats the unsubstantial realm of the imaginary. The difficulties of such a doctrine are sufficiently obvious; particularly, perhaps, in the doctrine's inability to cope adequately with the temporal and spatial continuum. The author suggests an alternative conception of many worlds—each real in itself and more or less independent—within the totality of worlds. Floating ideas, then, float not absolutely, but relatively, in another world, where they find another ground which supports them, and of which they are adjectives.

II. The worlds of the 'real' and of the 'imaginary' both fall within the universe, for we can say neither that all is real nor that all is imaginary. The imaginary is qualified by exclusion from my 'real world,' and apart from that exclusion it loses character. But what I call my real world is a construction from my felt self, depending in the end on my present self. It is, therefore, something other than true reality. The construction is, to be sure, 'required for certain ends and true within limits, but beyond these limits, more or less precarious, negligible, and in the end invalid.' The difference between the real and the imaginary depends ultimately upon content. So far as you abstract from the difference, the content of both worlds obviously becomes one. Such abstraction is permissible and useful, but not everywhere valid. The difference between my world of fact and my other worlds is important and necessary, but the exaggerated value we often attach to it is really illusory.

III. Play is defined as 'activity so far as that is felt to be unconstrained.' Life as a whole matters, is earnest; but within the contents of this whole there are degrees of necessity and importance. The contrast of play with earnest permits no hard division. There is, indeed, no human end which in principle excludes play. Discussing the relation between imagination and play, the author holds that make-believe and illusion are not always present in play and are not essential to it. It also develops that play is not, as one might perhaps gather from the definition, wholly unrestrained. We are always limited by the rules of the game, although we have as well the consciousness essential to the play activity that, as against what is more serious, the activity does not matter. Even the dog in his playful snapping knows that beyond a certain point *he must not*. The boy in his play knows this too, but he may also know that beyond a certain point *the thing is not*. Here a world of imagination comes in to qualify his real world, but the imaginary is always subject to and restrained by the real, and is not found to be essential to play in general. It would be interesting to carry the author's views a step further and attempt to trace the esthetic moment in life as being, perhaps, related to logical activity of mind as play is to physical activity of body.

The general conclusion of the article is stated thus: "We have found once more that the ready-made division of our world into matter of fact and ideas, into imaginary and real, has conducted us to error. And we saw that to sunder life into separate spheres of play and earnest is indefensible. Life and the world do not admit those compartments which are blindly fixed by hasty theories. Life and the world offer us an indefinite number of aspects and distinctions, and the worth and reality of these is in every case relative, though, because relative, it may in a given case become absolute."

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. January, 1907. *La psychologie quantitative* (pp. 1-32): J. J. VON BIERVLIET. - Fechner's psychophysics law must be interpreted as meaning that when a subject compares his impressions from a series of stimuli increasing in a geometric progression, it seems to him that the stimuli are increasing in an arithmetical progression. So formulated the law no longer defines exact relations between mind and body, but is still worthy of investigation. Is it established? The work of E. H. Weber, whom Fechner considered his precursor, shows results both too inexact and too insufficient to ground it (to be concluded). *Esthétique et psychologie* (pp. 33-66): A. BERTRAND. - Maine de Biran is a noteworthy esthetician as well as psychologist. His original views are to be found in the *Journal intime*. Art is not imitative, we do not copy, but we feel, translate and interpret, imitating only to supplement sluggish imagination. Naturalism is wrong, for beauty lies in man and is not a type of objects. Esthetic idealism is insufficient, for the work of art goes beyond reality to the inner truth of things. Feeling analogy, sympathy, is the key to art appreciation. *Sur la distinction du normal et du pathologique en sociologie* (pp. 67-80): A. BAYET. - M. Durkheim has assumed in his book 'Règles de la méthode sociologique' that there is definable a normal or healthy condition of society and a pathological one. But he defines the normal as the 'general' or 'frequent,' and so excludes exceptional perfections and the possibility of an evolution of the social type. Even if the normal were definable, it would be a mere play of words to compare a normal state of society with a state of health as defined by physiologists, for the latter is desirable as escape from pain, while a 'social pain' is meaningless. *Revue générale: Quelques publications récentes sur la morale* (pp. 81-99): J. SEGOND. *Analyses et comptes rendus*: R. Eisler, *Leib und Seele*: G. L. DUPRAT. Otto Effertz, *Les antagonismes économiques*: ADOLPHE LANDRY. *Sociological papers, published for the Sociological Society, Vol. II.*: S. JANKELEVITCH. Paul Gaultier, *Le sens de l'art. Sa nature, son rôle, sa valeur*: L. ARRÉAT. Robert Saitschick, *Französische Skeptiker*: Voltaire Mérimée, Rénan: L. ARRÉAT.

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NOTES AND NEWS

THE Western Philosophical Association met conjointly with the North Central Section of the American Psychological Association, in Chicago, March 28-30. The members of the former Association were the guests of the University of Chicago, and their sessions were held in the Law Building of the University. The following program was offered: Friday morning, *The Pedagogy of Philosophy*. *A Conference on Methods*: 'Garman as a Teacher,' James H. Tufts; 'The Teaching of Psychology,' James R. Angell; 'A Sketch of an Experimental Course in Esthetics,' Max Meyer; 'The Teaching of Ethics,' Frank Thilly. Friday afternoon, *The Interpretation of the Religious Consciousness*: 'The New Mysticism,' George A. Coe; 'A Bit of Physiological Religious Psychology,' E. D. Starbuck; 'The Philosophical Interpretation of the Religious Consciousness,' F. C. French; 'Suggestions toward the Psychology of Religion,' Irving King. Friday evening, *Annual Address of the President*: 'The Ego and the Empirical Psychology,' W. B. Pillsbury. Saturday morning, at the philosophical session: 'Pure Experience and Reality,' E. B. McGilvary; 'The Attributes of Reality,' J. E. Boodin; 'The Ultimate Value of Experience,' Stephen S. Colvin; 'Soeren Kirkgaard,' David Swenson; 'Realism and Objectivity,' B. H. Bode. Saturday morning, at the psychological session: 'Monaural Localization of Sound,' Daniel Starch; 'Further Observations on a Case of Audition without the Tympanic Mechanism,' W. V. D. Bingham; 'The Effect of Reading on the Eyes of School Children,' W. D. Scott; 'The Intensive Method of Experiment and Demonstration in Elementary Psychological Instruction,' Mabel C. Williams; 'The Relation of Pressure and Muscle Sense,' Thaddeus L. Bolton; 'Imitation in Monkeys,' John B. Watson; 'Preliminary Report on some Experiments on the Transference of Training,' G. Cutler Fracker. Saturday afternoon, at a joint session: 'The Place of Authority in the Moral Judgments of Common Sense,' F. C. Sharp; 'The

Theory of Democracy,' Warner Fite; 'Perception and Reflection,' George Rebec; 'Some Reflections upon the Efficacy of Consciousness,' Thaddeus L. Bolton; 'Note on Theories of Melody,' R. H. Stetson; 'The Normative Aspect of Education,' Louis C. Monin. A report of the proceedings, with abstracts of the papers read, will be published in full in a later issue of this JOURNAL.

At the meeting of the Aristotelian Society on March 4, Dr. F. C. S. Schiller read a paper on 'Humism and Humanism,' the following summary of which is from *The Athenæum*: "Although humanism is, like Humism, an empiricism, its conception of 'experience' is essentially different. (1) It is voluntaristic, not sensationalistic; (2) it rejects Hume's criticism of activity; (3) it is not naturalistic, nor (4) deterministic. Rationalism, on the other hand, agrees with Humism in being intellectualistic and in accepting its rejection of activity, after which it can not avoid the Humian analysis of causation. Hume originally would appear to have left out of account the primitively human notion of causation, *viz.*, the volitional, and to have assaulted merely the current philosophic theories. The volitional theory first is mentioned in the appendix to the 'Treatise,' and elaborately refuted in the 'Inquiry.' This refutation has generally been accepted by rationalists as well as by sensationalists, but is not conclusive. For voluntary motion is undoubtedly the experience ('impression') whence the notion of causation is derived; and Hume only proves that it may—not that it must—be interpreted according to his own assumptions. If these are granted, a complete naturalism and skepticism is inevitable, and any real answer to Hume becomes impossible. Thus it is rationalism, and not humanism, which has to capitulate to Hume."

THE two hundredth anniversary of the birth of the great Swedish naturalist, Linnæus, falls on May 23, 1907. The New York Academy of Sciences has taken the initiative in organizing a suitable celebration in honor of Linnæus. A bridge, just completed, spanning the Bronx River between the Botanical Garden and the Zoological Park, will be named the Linnæan Bridge, and upon it will be placed a bronze tablet with a commemorative inscription. The following program of exercises has been proposed: In the morning, addresses at the Museum of Natural History and an exhibition of the animals, minerals and rocks first classified by Linnæus. In the afternoon, at the Botanical Garden and Zoological Park in Bronx Park, addresses and exhibitions of plants and animals, together with the dedication of the bridge. In the evening, simultaneous exercises at the Museum of the Brooklyn Institute and at the New York Aquarium in Battery Park. It is estimated that fifteen hundred dollars will cover the expenses of the entire celebration. Contributions may be sent to the Secretary, Edmund Otis Hovey, at the American Museum of Natural History, New York City.

AMONG those who will receive the degree of doctor of laws from the University of Glasgow are Emile Boutroux, Henri Poincaré and Adolf Harnack.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE STREAM OF CONSCIOUSNESS

THE master's hand is often seen in his very inconsistencies, while the disciple takes one of the master's pardonable lapses and on this error builds up a one-sided theory which he calls by the master's name. I can not but think that the now widely accepted doctrine of numerous successive egos, no one conscious of itself but only of its glorious line of ancestors and of its precious legacy from them, is just such a master's slip.

This conviction was borne in upon me when lately I was led by the doctrine's hopeless falsification of the facts and also by the unsatisfactory results got by others from building on this doctrine, to reread the classic chapters 'The Stream of Thought' and 'The Consciousness of Self' in the 'Principles of Psychology,' in order that I might see just why Professor James propounded this theory. The impression brought away from this reading is that the successive egos in the stream of consciousness, so far from being the central thought of the chapters, mar the unity of what otherwise is a most wonderful and fascinating description of the facts as they are. My purpose in this paper, in which I shall try to prove the untenableness of the view in question, is not to show that there is a fly in the ointment, but that the fly can be taken out and leave the ointment in its proper purity.

The fundamental fact brought out in these two chapters is indicated by the title of the former, 'The Stream of Thought.' Thought is in time, and in time flows continuously. "The only breaches that can well be conceived to occur within the limits of a single mind would either be *interruptions*, *time-gaps* during which the consciousness went out altogether to come into existence again at a later moment; or they would be breaks in the *quality*, or content, of the thought, so abrupt that the segment that followed had no connection whatever with the one that went before" (Vol. I., p. 237).

These "time-gaps . . . might be more numerous than is usually supposed. If the consciousness is not aware of them, it can

not feel them as interruptions . . . Such consciousness as this, whatever it be for the onlooking psychologist, is for itself unbroken. It *feels* unbroken; a waking day of it is sensibly a unit as long as the day lasts, in the sense in which the hours themselves are units, as having all their parts next each other, with no intrusive alien substance between" (pp. 237-8). Of course, there is the same felt continuity where there are no gaps. "Consciousness, then, does not appear to itself chopped up in bits. Such words as 'chain' or 'train' do not describe it fitly as it presents itself in the first instance. It is nothing jointed; it flows. A 'river' or a 'stream' are the metaphors by which it is most naturally described" (p. 239).

But there is "kind of jointing and separateness among the parts, of which this statement seems to take no account. I refer to the breaks that are produced by sudden *contrasts in the quality of the successive segments of the stream of thought*" (p. 239). These breaks, however, can only be by confusion predicated of the thought itself. "The confusion is between the *thoughts themselves*, taken as subjective facts, and the *things of which they are aware*. It is natural to make this confusion, but easy to avoid it when once put on one's guard" (p. 240. *Italics mine*).

Now it is not so easy to avoid this confusion as one may think, even when once put on one's guard, and my contention in this paper is that *the doctrine of 'perishing pulses of thought' within the empirically continuous stream of thought is the result of just this confusion*. The stream of thought is the fact, the pulses of thought are not facts; *the only pulses are in the objects of thought*. And Professor James explicitly recognizes this when he says: "A silence may be broken by a thunder-clap, and we may be so stunned and confused for a moment by the shock as to give no instant account to ourselves of what has happened. But that very confusion is a mental state, and a state that passes us straight from the silence to the sound. The transition between the thought of one object and the thought of another is no more a break in the *thought* than a joint in a bamboo is a break in the wood. It is a part of the *consciousness* as much as the joint is a part of the *bamboo*" (p. 240). Here, then, is a case in which there is a tremendous thump in the pulse, but the thump is in the pulse of thought's object, not in thought's own pulse. "Language works against our preception of the truth. We name our thoughts simply, each *after its thing*, as if each knew its own thing and nothing else" (p. 241. *Italics mine*). Pulses are thus attributed to thought only by transferred epithet.

But if we forget this and let 'language work against our perception of the truth' of the unbroken continuity of thought, we have

done violence to the living unity of thought, for which we must make atonement; for as psychologists we must have a knower, even if we get him by hook or by crook. Having smashed the only genuine and original knower into bits, we must proceed to take these bits and breathe into them the breath of life, and they then, of course, become living souls. *Little* souls, however, for they were made of little bits, and their life is even as a vapor that appeareth for a little time and then vanisheth away. No wonder, then, that knowing that sudden destruction cometh upon them as travail upon a woman with child and that they shall not escape, they work while it is called day. No sooner is one of them born than he sets up a claim to his inheritance, executes his will and bequeaths his heritage to his successors.

The charter of rights under which he transacts this testamentary business allows him plenary power to transmit everything in sight, even his own selfhood. Hence he passes on to his heirs and assigns his own personality, resurgent in the very act and article of death into a metempsychotic slavery, as it is written, "Each thought is thus born an owner, and dies owned, transmitting whatever it realized as its self to its own later proprietor . . . It is this trick which the nascent thought has of immediately taking up the expiring thought and 'adopting' it, which is the foundation of the appropriation of most of the remoter constituents of the self. Who owns the last self owns the self before the last, for what possesses the possessor possesses the possessed" (pp. 339-340).

Thus do we have to outdo the worst legal fictions in order to get a new start for our psychology when it is brought to a dead halt by the fallacy of construing literally a transferred epithet! Language plays queer tricks with us at times.

The same trick is played upon us when we deal with the feeling of relations. We begin here again with 'the wonderful stream of our consciousness,' and 'what strikes us first is' the 'different pace of its parts.' "When the rate is slow we are aware of the *object of our thought* in a comparatively restful and stable way. When rapid, we are aware of a passage, a relation, a transition *from it, or between it and something else*" (p. 243. The first italics are mine).

The confusion is already beginning to creep on us unawares in the sentences above quoted. The different *parts of thought* walk with different pace. But of course we must remember 'that, *however complex the object* [of thought] *may be, the thought of it is one undivided state of consciousness,*'¹ and that when we speak of 'parts

¹ *Op. cit.*, I., p. 276. Professor James's own italics show how important this unity of thought is for him. He devotes seven pages and five drawings to establish this unity.

of thought' we really ought to mean *parts of thought's objects*, not *parts of thought itself*, for 'if things are to be thought in relation, they must be thought together, and in one *something*, be that something ego, psychosis, state of consciousness, or whatever you please' (p. 277). It is one 'span of consciousness' that bridges over the gap made by the disconnectedness of things. "The consciousness remains sensibly continuous and one. What now is the common whole? The natural name for it is *myself, I, or me*" (p. 238).

'The comparatively restful and stable way' in which 'we are aware of the object of our thought' sometimes, is the comparatively stable and restful way these *objects* have of behaving at these times, and when thought seems to be restlessly dancing about from object to object, it is the object that is dancing back and forth before the '*one something*' whose natural name is '*myself, I, or me.*'

The confusion between thought and its objects, thus slightly apparent in the quotations given a moment ago, becomes more confounded when we are told that '*so surely as relations between objects exist in rerum naturâ, so surely, and more surely, do feelings exist to which these relations are known*' (p. 245). For now 'the transitive parts' and 'the substantive parts' of thought's object have become 'the transitive parts' and 'the substantive parts' of the stream of thought (p. 243). We have, therefore, the '*one something,*' whose natural name is I, broken up into *three* somethings, 'substantive state' No. 1, 'transitive state,' and 'substantive state' No. 2. The transitive state is so small that, like the little baby in the story, it can be ignored. The sensationalists do so ignore it, and thus they get 'substantive psychoses, sensations and their copies and derivatives, juxtaposed like dominoes in a game, but really separate, everything else verbal illusion' (p. 245). But if we will only interpose 'transitive psychoses' between these 'substantive' ones, the three juxtaposed psychoses will no longer be 'like dominoes in a game, but really separate.' They "melt into each other like dissolving views. Properly they are but one protracted consciousness, one unbroken stream" (p. 248). Three souls with but a single thought!

This is a modern trinitarianism, just as mysterious and baffling to intelligence as its theological predecessor, and like Tertullian we must say, *Credo quia absurdum*. Is it any wonder that the profane intellect should once in a while assert itself and come out boldly for Sabellianism, saying that there are not three feelings and one thought, but only one thought; that the personified feelings are mere abstractions, choppings-up of the one continuous thought, the 'one protracted consciousness'? The only reason why they have even a semblance of life is that they are, according to the theory

which hypostatizes them, required to live only for a moment after the amputation.

The same confusion between thought and its objects appears still again in the chapter dealing with 'The Perception of Time.' "*The knowledge of some other part of the stream, past or future, near or remote, is always mixed in with our knowledge of the present thing*" (p. 606). If we take these italicized words at their face value, we should have a mixing of knowledge with knowledge in a way that is incomprehensible if it is also true that '*however complex the object may be, the thought of it is one undivided state of consciousness*' (p. 276). If this latter statement is true, and I for one believe that it is true, we can not speak of the knowledge of some part of the stream, past or future, as *mixed in* with the knowledge of the present thing, but rather must we say that in our knowledge of objects, the objects known as past or future are objects of the *one* knowledge that also knows the present.

It would take us beyond the limits allowed for this paper to examine this same confusion as it appears in various other statements in the chapter from which the sentence just criticized is taken, but such an examination would give the same result as that which we have obtained by scrutinizing that one sentence. This result is that 'the specious present,' that 'saddle-back, with a certain breadth of its own on which we sit perched, and from which we look in two directions into time' (p. 609), is not a divisible consciousness, nor is it a little complete bit of consciousness, followed by another little complete bit of consciousness, each describable as a separate 'pulse of thought,' whose 'birth coincided exactly with the death of another' (p. 339). The speciously present consciousness continues flowing down the stream of time, always comprehending some past object as past, but, at every moment, itself so much of a unity that at no time in its steady flow can it be, except by a violent abstraction, spoken of as a new ego coming to birth immediately on the decease of its predecessor. When this continuous consciousness does cease for a time, as periodically it does, it is not immediately succeeded by another consciousness inheriting its content and its felt selfhood, but there is no more consciousness till another consciousness arises at a lower point in the stream of time and takes up in part the content of its predecessor.

When this happens we have a real breach in the continuity of consciousness and at the same time an 'appropriation' by a later consciousness of the selfhood involved in a prior one. If this appropriation is not to be accepted as an ultimate datum, then an explanation is demanded for it, and, so far as I know, no better

explanation has been given than by Professor James. The 'quality of warmth and intimacy and immediacy' which attaches to the content of the prior consciousness seems to be the reason, when the quality appears in the content of a subsequent consciousness, for the latter's identification of itself with the former. But identity here has a meaning, furnished by the previously felt continuity of the unbroken consciousness with itself; and the same 'warmth and intimacy' which characterized all the *contents* of the former consciousness can now be considered, when appearing as marks of the contents of the second consciousness, as pointing to an identity of the two consciousnesses—an identity similar to the actual identity which the first consciousness felt in itself.²

What Professor James, therefore, seems to have done is to have taken a psychological explanation of the mediated identity of two successive, but actually separated, consciousnesses and to have used it in the explanation of a continuity which is not interrupted. But before he can so use the explanation he must break the actual continuity of consciousness into successive 'thoughts.' These separate 'thoughts,' thus obtained in an alleged isolation, may then be reunited by the same principle that his 'Psychology' proposes with great plausibility to employ in uniting what is actually separated. This looks like making a problem where none exists, in order to solve it. It comes in the last resort to exactly the same sort of procedure that Professor James finds fault with in Hume. Hume, according to Professor James, tried to glue up the *dissecta membra* of consciousness by using the principle of association. Professor James uses two kinds of glue, 'feelings of transition' and the 'quality of warmth and intimacy.' But neither Hume nor Professor James succeeds in making the glued aggregate anything more than a counterfeit presentment of the really continuous psychic life.

I think we can partly understand why such a master of psychological description should have been led to find little egos where there are none. He was after the 'transcendentalist' as well as after the facts, and in his endeavor to prove that introspection does not reveal an unalterable time-neutralizing ego, he went to the extreme of asserting the existence of little egos, constantly neutralized by time and transmuted each into its successor. If these extreme statements, pardonable in the heat of controversy, were elimi-

² Whether this thoroughly explains the 'appropriation' I shall not attempt to say here. I merely wish to point to the fact that there is a problem here which is different from that in the felt continuity of a consciousness which is actually continuous. In the other case there is a felt continuity in a consciousness which is actually discontinuous.

nated from the 'Psychology,' we should have left all but a very small part of the great work—a part that mars the unity of the work, but which by its very paradox has drawn the attention of many readers from the truth that Professor James emphasizes again and again, the truth that consciousness is a continuous stream, and not a chain or a train; an experienced and felt unity throughout the waking day. "It is sensibly a unit as long as that day lasts."³

Against those who would maintain that such an empirical unity of consciousness is not sufficient for philosophical purposes, I would urge that what is good enough as a correct statement of facts as they actually are, ought to be good enough for philosophy. Of course, philosophy must not stop with this single fact, but must bring it into intelligible relation with other facts which this statement does not include. When this is done, I venture to think that the continuity of consciousness will prove to be near the center of gravity of the philosophical system.⁴

But there is a fact implied in the very statement of the felt continuity of consciousness which I wish now to take up. I do this partly because this fact is connected, both by Professor James and by others, with the doctrine of the little ultimate egos, and partly because I shall find occasion in a later article to make use of this fact and do not desire to interrupt by the discussion of it there the course of my argument in that article.

The successive egos, according to their sponsors, can not know themselves except by proxy. Each gives to its successor a power of attorney to know it. If these minute creatures "really were the innermost sanctuary, the *ultimate* one of all the selves whose being we can ever directly experience, it would follow that *all* that is experienced is, strictly considered, *objective*; that this objective falls asunder into two contrasted parts, one realized as 'self' and the other as 'not-self'; and that over and above these parts there is nothing save the fact that they are known, the fact of the stream of thought being there as the indispensable subjective condition of their being experienced at all. But this *condition* of the experience is not one of the *things experienced* at the moment; this knowing

³ *Op. cit.*, I., p. 238. I have already quoted the rest of the sentence elsewhere in this paper. The sentence is part of a passage in which the author is discussing pathological gaps in the 'objective continuity' of consciousness. This, I think, explains the rest of the sentence: "as having all their parts *next* each other, with no alien substances between" (*italics mine*).

⁴ How the temporal character of consciousness is reconcilable with what seem to me to be the only valid meanings expressed by the so-called 'time-transcendence' of consciousness, I attempted to show several years ago in an article on 'The Eternal Consciousness,' *Mind*, N. S., 40 (1901), pp. 479 ff. The last two or three pages give a summary of the attempted reconciliation.

is not immediately *known*. It is only known in subsequent reflection" (p. 304).

It is to be noticed that this doctrine of self-consciousness as a coroner's jury engaged in a *post mortem* examination of the last ultimate self that has just expired, is here presented merely as the logical consequent of the doctrine of ultimate successive selves, the birth of each of which 'coincides with the death of another.' We are, therefore, prompted to ask whether there is any other ground for this denial of direct awareness of awareness than the fact that it is a corollary of what I have tried to prove to be an erroneous proposition. No other ground is given in the passage from which the above quotation is taken. Most of this paragraph is written in the subjunctive, with a 'might be' reinforced by several 'would be's.' Herein Professor James shows clearly how thoroughly he recognizes that in a large measure at any rate the doctrine of *ex post facto* self-consciousness is not derived from an independent examination of the facts, but from the exigency of theoretical consistency on the part of those who have espoused the cause of temporal psychological atomism. There are other passages where this derivation of the doctrine is lost sight of, and the corollary is erected into a psychological axiom. But I shall now try to show that this doctrine stands in contradiction to other statements of more unquestionable validity, and that if either must go, it is the doctrine in question.

I have already quoted some of these statements. "Such consciousness as this, whatever it be for the onlooking psychologist, is for itself unbroken. It *feels* unbroken." Another such statement runs: "Consciousness is, *for itself*, not what it was in the former case." And still another: "Consciousness remains sensibly continuous and one" (p. 238).

Now, if there is no consciousness of consciousness, how can consciousness be anything *for itself*? It might be something for its successor, but to say that its successor now feels that the predecessor *felt itself* unbroken, when the predecessor did not feel itself at all, and then to say that this subsequent feeling of the successor must be accepted as valid, is to make that successor commit the psychologist's fallacy. Whether a fallacy committed by such a tiny mite is worth considering, I leave for its father and its godfathers to decide. But if this little fellow is not amenable to the rules of the psychologist's logic, its testimony should not be accepted in the psychological court. What becomes, then, of the cardinal doctrine of the continuous stream of thought? But as the 'ultimate self' is the only knower psychology knows, we *must* accept its testimony.

Either, then, the thought knows itself unbroken, and in so knowing, knows itself; or it does not know itself, and, therefore, can not know itself unbroken. Anybody's else saying that it is really unbroken is sheer impertinence, for who knows the mind of this little man except the spirit of this little man that is in him? If the succeeding homunculus inherits this knowledge of its predecessor's continuity with its predecessors, then the knowledge must have been there to inherit. Or shall we say that having already transgressed the legal analogy so far as to make it possible for the homunculus to transmit his selfhood to his heir, we may go on to let him transmit a piece of property he really does not possess, but which for all that his heir actually can get by inheritance? Almost Professor James persuades me to be a homunculus; I could, expiring the next moment, leave my non-existent youth and wealth and genius to the nascent thought, which would appropriate my legacy and pass it down the lucky line!

It might be replied that while the egoule does not know himself continuous with his progenitors, he experiences this continuity in the immediate way of feeling. So be it. Then we have to go over the same cross-examination with reference to experience. To experience an experience as continuous with a past experience, must one not have an experience of experience? It matters not whether we call this self-awareness an experience of experience, or a knowledge of knowledge, or a consciousness of consciousness, or an awareness of awareness, we are committed as psychologists trying to find out what the psychosis is for itself,—not what it is for us,—to assume that in some dim way at least it is for itself. And this is all I wish to prove.

It looks very much as if the psychologist who denies such awareness of awareness himself commits a fallacy very similar to the psychologist's fallacy. The psychologist examines his experiences *objectively* so far as he can, and then he is prone to think that because the psychosis under examination is known by him as distinct from the psychosis with which he knows, therefore every psychosis in order to be known requires as knower a distinct psychosis.

Perhaps the more correct way to put this is to say that the error of those who deny awareness of awareness is to be found in the confusion of the empirical *me* with the empirical *I*. There are many experiences from which the *me* is absent, or if it is present, it is in the vague background, so that the only thing attended to is some *not-me*. When such a psychosis becomes an object of psychological inspection, the absence is noted, and is misread into an absence of the *I* of the psychosis. But whatever be the confusion, confusion there surely is, else there is no valid psychology.

If, now, we are hardy enough to believe that psychology is possible, we must believe that there is an awareness of awareness whenever there is an awareness of objects. Let us see what this awareness of awareness is.

1. It is generally a fact not noted explicitly, not attended to. It is like some object in the background of consciousness which we do not mark till we are asked whether it is there. Even then we do not find it easily, just as the beginner in psychological introspection does not readily isolate certain organic sensations which may be there and which he may afterward recognize as having been there all the time though he could not 'spot' them. I wonder whether the reason why so many psychologists fail to find this awareness of awareness is not due to the fact that they have been so confidently assured by a leading psychologist that it is not there. *He* did not look for it because his doctrine of the *egoules* showed that it could not be there. *If* the ultimate one of all the selves were the citadel of consciousness, 'it might be better called a stream of *Sciousness* pure and simple' (p. 304). Later, the 'feeling of if,' being 'transitive,' transited, leaving only the 'substantive' 'stream of *Sciousness*.'

2. This awareness of awareness never exists except in the one indissoluble awareness of something else. We can never be aware of being aware without being aware, in the same awareness, of an 'other' than the awareness. Self-consciousness, in the sense of consciousness of I, is not an independent 'entity.'

3. If we are aware of awareness when we are aware of some 'object,' we may not say that our awareness is an 'object' of itself, without using 'object' in two senses. Consciousness is conscious of itself as *consciousness*; it is conscious of its 'object' not as *consciencing*, if I may use this word, but as *conscienced*. (Of course, I do not refer here to the 'prerational' knowledge of other consciousnesses.) Just as the relation of consciousness to its object is unique, so the 'relation' of consciousness to itself is unique. And these two uniquenesses are not to be lumped together as one, even if we have no better word than 'object' to name both the 'objects' of awareness by. When I call two of my friends 'John,' I must remember that they are different *kinds* of John. The same remark applies to the 'relation' of consciousness to itself. It is not a relation like other relations. It is a self-complete one-term relation, needing for its existence, it is true, some 'object,' in the stricter sense of the word; but when that object is there for consciousness, consciousness may exist for itself. Other relations are 'transitive,' or *transeunt*, this relation is 'immanent.' Here again the uniqueness must not be lost sight of if we insist upon

giving to what we mean the name that we give to other uniquenesses, also called 'relations.'

4. The same remarks apply, *mutatis mutandis*, to the *distinctness* of consciousness from its object, as compared with the distinctness of objects from each other. The former distinctness is just what it is, and nothing else. From the one kind of distinctness we may not argue to the other kind, without giving some proof that the conclusion is valid, apart from the argument. We may illustrate our meaning by using the one kind of distinctness as example when we are speaking of the other kind, but illustration of meaning is no proof of correctness of meaning.

5. It may not be urged, except in malicious sophistry, that if there is an awareness of awareness, there must by the same token be an awareness of awareness of awareness, and so on *ad infinitum*. Suppose one were to say that the similarity of black to gray is similar to the similarity of red to pink (both the gray and the pink being obtained by mixing white with another color), has such a statement set one upon a sorites of similarities, of which there is no ending? The man who should refuse to count his children for fear lest, when he got started on his enumeration, he might find a new child born with each step in the count, ought to be sent to an asylum of some sort where he could find refuge from his rapidly increasing domestic burdens. Again, the mere fact that in the abstract numerical series what is true of n is also true of $n + 1$, does not guarantee the *actual existence in rerum naturâ* of three parents for a child who has two. In like manner I do not see why it should be argued that if there be an awareness of awareness, then we have counted two and must go on to count three and four and five awarenesses. This way madness lies.

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DISCUSSION

THE PRAGMATIC CURE OF DOUBT

NO humanist could possibly remain unmoved by Professor Russell's pathetic appeal to be saved from the agonies of philosophic doubt by so irresistibly cogent a proof of pragmatism that he would have no alternative to embracing it.¹ Professor Russell seems the more deserving of assistance because his eyes have been opened

¹ See this JOURNAL, Vol. IV., p. 57, 'Pragmatism as the Salvation from Philosophic Doubt.'

to the fact that all the other theories of knowledge do logically issue in philosophic doubt. This, he sees, is the end of idealistic and realistic epistemologies alike, and his recognition of it shows that he has accurately gauged the philosophic situation.

The saving of souls, however, is a ticklish business and one requiring a certain cooperation on the patient's part. It will be wise, therefore, at first to essay nothing more ambitious than a diagnosis of his malady, and though I have had some little experience of his constitution,² I shall not attempt more than this, with the addition, perhaps, of a few suggestions for alleviating the most distressing symptoms.

It is clear, in the first place, that Professor Russell has not tried the general regimen which pragmatism has prescribed for the philosophic doubter. The general specific for doubt lies in the recognition of the unreality of merely theoretic doubt. It is illegitimate to doubt what works in practice for no other reason than that one finds oneself able to deny it in the abstract. For the primary business of truth is to guide life rather than to repress idle questionings. Now in this case it is not part of Professor Russell's contention that the pragmatic standpoint would be unsatisfactory if he could attain it. He even admits (p. 61) that it 'saves from doubt those who are or happen to become pragmatists.' He only complains that *he* is not driven on to this standpoint. But how can he be cured by a specific he declines to take? How can he be saved, if he will not sacrifice his belief in a theoretic truth which is somehow independent of action and unaffected by the pragmatic sifting out of unprofitable theories?

But perhaps Professor Russell means to contend that it is not his heart which is at fault, but his thought. He has a wish to believe (p. 60), but needs intellectual enlightenment as to how the pragmatic analysis of truth can on its own principles acquire a claim upon his acceptance. It must show itself a *true* doctrine, in its own sense of 'truth.' That is, the pragmatic conception of truth as a fulfilling experience *must apply also to its own truth*.

Surely a very reasonable demand, and if this were all, Professor Russell's cure should be speedy and complete. For there is no difficulty about interpreting the claim to truth made by the pragmatic view of truth as meaning that *if it is accepted, it will be found satisfactory*. The pragmatic analysis will thus be true by its own standard, if on being tried it appears satisfactory.

But I greatly fear that this is not quite all that Professor Russell means. He wants pragmatism to prove itself 'true' (in the sense of

² Cf. this JOURNAL, Vol. III., p. 599, and Vol. IV., p. 42.

'satisfactory') *without* trying it and so finding it satisfactory. He wants to be saved from doubt by no act of his own. And this, of course, would be an absurdity on the pragmatic theory, seeing that a truth has to be tried to be verified by its working. It would be inconsistent in a theory, which claims to be satisfactory *if tried*, to try to be equally satisfactory when not tried. Professor Russell, therefore, must have been deluded when he thought he had a wish to believe: he was really bent on imposing impossible conditions.

Nor are the reasons far to seek. What is troubling him at bottom is (1) the fact that the pragmatic theory has to be adopted before it can be verified; (2) the fact that the choice between it and its rivals is a real one, a free option, and not a matter of intellectual compulsion; and (3) the fact that he will not recognize the reality of alternatives.³ And if he is (as I suspect) really free, he can not, of course, be *compelled* to exercise his choice. Nor can a theory which demands to be chosen as an alternative to skepticism and as a preliminary to its own verification, possibly exercise upon him the *vis a tergo* he desires.

But what does this prove but the determination of his determinism? He is, of course, free to be determined, if he is not determined to be free. But he may be enabled to perceive how arbitrary his procedure is, if it is pointed out to him that similar alternatives and occasions for real choices occur all over the philosophic field.

Thus (1) the choice between the optimistic and the pessimistic interpretation of experience is an open one, and confirms itself when made,⁴ though no man can be *forced* to adopt either in its integrity. (2) The causal postulate need not be made, and can only be proved after it has been assumed.⁵ (3) The choice between determinism and libertarianism is similar.⁶ So (4) is the rejection of solipsism.⁷ Why, then, should not the decision here, *viz.*, that between skepticism and pragmatism, be of the same kind, and require an act of will? The recognition of such acts is surely nothing a *voluntaristic* philosophy need boggle at, and the diagnosis indicated by Professor Russell's symptoms would seem to be incipient paralysis of the will proceeding (probably) from chronic *intellectualitis*.

Plain traces of the same malady appear also in the subsequent difficulties discovered by Professor Russell. He repeats the old objection that pragmatism must be solipsism, but candidly states the answer, *viz.*, that 'others' may be postulated, though not that this

³ As in his former article. Cf. Vol. IV., p. 44.

⁴ Cf. 'Humanism,' p. 164.

⁵ Cf. 'Studies in Humanism,' p. 361.

⁶ Cf. *ibid.*, p. 406.

⁷ *Ibid.*, pp. 471-2.

postulate is found to work. But he then speedily converts this postulate into a 'presupposition,' which *may* be a very different thing. For a 'presupposition,' as intellectualistically understood, is usually regarded as something proved or superior to proof, whereas a postulate is assumed before it is proved, and is proved by its use.

Again, the 'right to start with a pluralistic world' (p. 62) is at once rendered nugatory by a denial of the right to conceive it in such a way that its constituents *can* interact so as to form a world. But this denial rests merely on an arbitrary interpretation of the word 'independent' which is only put upon it when a verbal refutation of 'pluralism' is required.

Logical completeness would perhaps require me to discuss at length the objections Professor Russell bases on his preception of the self-verifying and self-consolidating course of experience. But without attempting this, I may finally point out to him that as he conceives the correspondence or agreement of thought with reality, it falls very far short of transcending experience, and so differs both from the absolutist and from the realist notions on the subject. He will find on reflection that neither his sense of correspondence nor a certain determinateness of reality is in any way inconsistent with pragmatism.⁸ He will then convince himself that pragmatism can and does attach a meaning to 'correspondence' which differs *toto cælo* from that of intellectualism, but apparently has the good fortune to coincide with his own. And then it may be that his cure will be complete.

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A REPLY TO DR. SCHILLER

IN No. 2 of the current volume of this JOURNAL Dr. Schiller briefly and somewhat humorously discussed an article of mine which appeared in No. 22 of the preceding volume, and in the present number he kindly undertakes to answer what he calls my pathetic appeal to be saved from philosophic doubt. I take this opportunity to reply to these discussions in their order.

I

And first, to reply to Dr. Schiller's discussion of my article upon 'The Pragmatist's Meaning of Truth,' I am entirely willing to put in the place of his 'Babe in the Wood' a man as fully endowed

⁸ For further particulars see 'Studies in Humanism,' especially pp. 422-51.

as Dr. Schiller suggests; nay, he shall be a man after my critic's own heart, a pragmatic philosopher. Now having granted all this, I maintain that my original proposition is entirely unaffected. It still remains true, that whatever practical problem this supposed man shall solve, that solution is possible only if his action or his thought conforms to objective conditions which his purpose does not constitute. My critic admits that *some* part of the entire reality of the given situation was not determined by the purpose of my supposed traveler in the Adirondack forest. Now my contention is, it was just that part of the environing reality which, because it determined which thought or action of the seeker for food and shelter was true, determined also and by consequence which action was to be successful. I freely admit that it is always its relevancy to some purpose which gives to truth its practical importance and its value, but I hold that it is not this valuation of an idea which makes an idea true. What Dr. Schiller says about the meaning of the fact of being lost, say, in those woods, *is*, of course, logically consistent with his meaning of truth; but such an explanation as he gives of being lost, I confess strikes me as a *reductio ad absurdum* of his doctrine. If one is lost only because one knows or cares about such a fact, and only if one wants to get out of the woods and can not do so, it would seem to follow that should a traveler fall and break his leg and consequently be unable to get out of the woods, he would be lost, although he might hold in hand a complete map of the woods; and should a child in those same woods be absolutely ignorant of the way home, and at the same time not be caring about going home but be absorbed in chasing butterflies or in picking flowers, he would not be a lost child while in that state of mind. I had always supposed a man is lost in a forest when he does not *know the way out*, and his ignorance of the way out I have supposed means not having a *true idea* of the situation in which he is placed. But, verily, the ways of pragmatism are past finding out by him who does not have the good fortune to be a pragmatist.

II

It is naturally very gratifying to me that my pathetic appeal to be saved from doubt should have been answered by a specialist in the pragmatic art of healing of such repute as Dr. Schiller. He has come to my help most promptly and with most generous and kind intentions, I will believe. He has given a diagnosis of my case, he prescribes a treatment and adds what seems to be on the whole a rather hopeful prognosis. This diagnosis is rather severe, somewhat humiliating and somewhat alarming. The remedy prescribed

is, I suppose, meant for such serious cases in which only a heroic treatment can promise success.

Dr. Schiller finds, in the first place, that I am suffering from a species of mental perversion which disposes me to cling very obstinately to an unreal doubt, by which I suppose he means an unjustifiable or unfounded doubt. I am in the next place a victim of a delusional idea, *viz.*, that I think I want to be saved from doubt when, in fact, I want to oppose objections to being saved. A third factor my doctor discovers in my melancholy case is incipient paralysis of the will, due to hyperintellectualism. This causes me to make absurd demands, *viz.*, I demand that I be made certain that pragmatism is true and will cure me of doubt before I try the doctrine and give it a chance to work my cure. I demand to be made intellectually certain that pragmatism is true, instead of being willing to attain this certainty by the only method which can give this certainty.

I demand that pragmatism shall save me from doubt while at the same time I refuse to try the pragmatic method of salvation. I ask to be cured, while I refuse to take the medicine that can alone effect my cure. If my case has been correctly diagnosed it is certainly a desperate one, and I do not wonder that Dr. Schiller takes a serious view of it; I wonder rather that he did not stop with his diagnosis, for how could he hope that a patient so perverse and unreasonable will be persuaded to try his remedy? But, nevertheless, he has graciously told me how I can be saved; and without stopping to show him that I am not quite so bad a patient as he takes me to be, I will pass at once to a brief examination of the pragmatic method of curing philosophic doubt.

As I understand Dr. Schiller, what I am to do to be saved is the following: I must sacrifice my doubt as merely theoretic; I must not permit this doubt to paralyze my will; I must accept, adopt, believe pragmatism so far at least as to try it, and by trial find it true because it will prove satisfactory, will work well in experience; just as I must eat the pudding if I would know that it is good, just as I must take the medicine if I would know that it can cure, so I must take the pragmatic medicine for doubt if I would experience the cure of that doubt. Now at first blush this seems very clear, very convincing and very satisfying. But, unfortunately, my questioning mania will not let me go ahead, and here I stand and begin to question and to think again. I fear I shall do so until the 'native hue' of my resolution is 'sicklied o'er with the pale cast of thought.' First, I ask, just what does Dr. Schiller mean? If I take one meaning of these statements, this demand is, I confess, wholly intelligible and very reasonable; but, unfortunately, I can

see no way out of my doubt if I follow the direction so interpreted. If I take the other meaning which these statements will bear, they make a demand which is simply preposterous, absurd and utterly meaningless to me. Let me attempt to justify these positions. If I interpret the demand made of me in terms of *my present* meaning of truth, the intellectualistic meaning, this demand merely says that I am to treat pragmatism as I would an hypothesis which is to be tested and verified by its accordance with experience. Now, under this interpretation of pragmatism as a doctrine which claims to be true, two things are quite distinct and clearly separable—the truth of the doctrine, and that which produces in my mind the certainty of this truth. The doctrine as true is one thing, its verification is quite a different thing. Now it should not be necessary to prove that this method of establishing the claim of pragmatism to be a true doctrine can not deliver me from theoretic doubt. Let me assume that it is in terms of the pragmatic meaning of truth that I am to understand this demand to become a pragmatist, and the consequence is, I find this demand is simply preposterous and utterly impracticable. For pragmatism identifies truth with satisfying experience. Working well, bringing satisfaction, issuing in good things, are not merely the sign, the evidence, that a doctrine is true, these good sorts of experience *are that doctrine's truth*.

Now, if this be the meaning of being true, this demand that I try pragmatism to see that it is true sounds to me as absurd as would be the demand to experience the being cured, or rather the satisfaction of being cured, and then to call this satisfying experience the medicine that cures me. It is not unmeaning to say 'the proof of the pudding is in the eating,' but what an absurdity to say 'therefore the eating is that which makes the pudding good to eat'! Now, when with his meaning of truth my pragmatic doctor asks me to accept, to adopt, to believe pragmatism in order to verify it by experience, this demand seems to be identical with the demand to believe, to accept, to adopt this satisfying experience, to verify this verification; for to my mind this meaning of a true doctrine identifies that which is first to be accepted, provisionally believed, etc., with that which it is said will result from this acceptance, this adoption, this belief; and this proposal seems to be as absurd as the proposal to begin with a certain kind of satisfaction from eating and to call this satisfaction a pudding, the goodness of which this satisfying eating is to prove.

The same ambiguity attaches to the demand of my good doctor that I recognize the alternative, skepticism or pragmatism, and exercise my free will in choosing between them, just as I would choose between the doctrines of pessimism and optimism. Dr.

Schiller complains that I insist upon having my will—or my choice—theoretically determined instead of exercising my freedom in choosing, by which I suppose he means that I will not elect to try pragmatism until I am intellectually constrained to accept it as a true doctrine. And his demand is that I freely choose to try it, and by trying it attain this desired certainty. . . . But what exactly does this direction mean? Shall I choose pragmatism because I am free in the sense that I can choose it or the alternative doctrine of skepticism? Shall I choose pragmatism because I like that doctrine, because I am likely to find it enjoyable or otherwise satisfying? Shall I choose pragmatism because there are reasons which incline me to judge that it is true, or nearer being true than the alternative doctrine? I can not suppose that Dr. Schiller means the first sort of choice, a choice without any reason for it. He must mean either the second or the third sort of choice. I will assume that he means the third, *viz.*, I am to choose pragmatism because I judge it to be true, or because I judge it to be *probably* true.

The way this doctrine works in experience being a criterion or a mark of its truth, a reason which influences my mind to adopt it as true, in adopting it I am exercising a free will, but this free choice is at the same time one for which a reason can be given, and in that sense of the term it is determined, so far as that reason influences my choice. But I can exercise this rational freedom of will only if I retain my present meaning of truth, and, therefore, clearly distinguish between the fact that a doctrine is true and those things which are reasons that support or justify my belief that this doctrine is true. Now, just as in the adoption of pragmatism as a hypothesis to be verified by its consequences, this my choice of pragmatism can not lead me to a certainty which excludes philosophic doubt.

But it is more likely my pragmatic doctor means that pragmatism is to be chosen as the true doctrine in *his* meaning of the term *true*, that he means I am to accept by an act of free will his meaning of truth. Now, inasmuch as his meaning of the true identifies it with the satisfying, the working well in experience, etc., it seems to me that Dr. Schiller is merely exhorting me to come into a given experience. He is no longer trying to convince my logical understanding, he is trying to move my will to action. He has ceased to reason with me, he commands that I do something, or rather experience something, with the assurance that when I shall have got this experience I shall then be in possession of truth because this sort of experience is that truth I have been seeking.

I think this manner of treating my case is a consistent method for the pragmatist to employ. I think it is the only method that a

consistent pragmatist *can* employ. I do not see how a pragmatist can undertake to reason with any body or attempt to produce a reasonable conviction in any one's mind. How can two parties reason together unless the terms essential to their reasoning have the same meaning to both minds? Now, since the pragmatist means by *true* something entirely different from the intellectualist's meaning of that term, how can he reason with the intellectualist? Let my pragmatic would-be deliverer from doubt content himself with exhortation, with appeals to my will, let him do as people do in times of religious revivals, *viz.*, testify to others what they are enjoying, the very desirable experiences they are having, appeal to others to get somehow into the same experience, to get religion, be converted, experience regeneration, etc. It seems to me as unmeaning, and, therefore, as futile, for a pragmatist to reason with one who is not a pragmatist as it would be for a mystic to attempt to reason another mind into his mystical experiences or to attempt to convince this other mind that his mystical doctrine is true.

My conclusion is, that for myself as I now view the matter, I must elect to remain in doubt in preference to being saved from doubt at what, it seems to me, is the expense of my logical understanding. I may be a very perverse and dull-witted patient, but as I understand the remedy which is prescribed for me I think it is on the whole worse than the disease, and for that reason I must decline to take it.

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REVIEWS AND ABSTRACTS OF LITERATURE

Philosophical Problems in the Light of Vital Organization. EDMOND MONTGOMERY. New York and London: G. P. Putnam's Sons. Pp. 462.

This work is mainly devoted to setting forth the author's somewhat peculiar views, or perhaps it would be more correct to say, the somewhat peculiar setting forth of a familiar view—relating to what is here termed the psychophysical puzzle. What is peculiar is the mystical, or mystifying, phraseology in which these views are presented. This is made evident by such phrases as 'extra-conscious power-endowed existent,' 'matrix of potential mind,' 'enduring matrix existing in latency,' and so on running through all these pages. But if just plain 'organism' be read into most of these expressions, that is, 'organism' as conceived by the plain man who has never given a thought as to how he came by this conception, and in whom no reasoning could add anything to his conception of reality beyond what he obtains directly through his senses, there will then be much less difficulty in understanding the author's

meaning. However, much irritation may be felt at repeatedly meeting a familiar acquaintance in such strange habiliments.

This work is divided into two parts: 1, Philosophical Survey; 2, Biological Solutions. Some of the problems discussed in the first part are substance, identity, causation, the problem of the external world, universals and particulars, innate faculties, subject and object, etc. And the views on these problems held by many of the prominent thinkers of the past are here subjected to criticism with a view to showing their general inadequacy as judged from the author's standpoint. The main effort of the author throughout these pages is devoted to the materialization of the extra-conscious existent, for without the certainty of a *real* organism investigations of this nature must all lead either to 'nihilism, solipsism or chaos.' Dr. Montgomery is particularly severe on idealists of all shades. "The content of undivided consciousness, which constitutes all in all we are in any way aware of, and which is the only source from which pure idealism or any other philosophy can draw material for their world constructions or world interpretations, proves this to consist of nothing but lapsing moments of awareness, containing only ephemeral ideal phenomena. Such an actual state of things renders it clearly impossible for pure idealism of any kind legitimately to transcend the utterly secluded sphere of solipsism; or to escape complete nihilistic phenomenalism. For there is here no prominent substance, no kind of substantial *égo* or subject, to support the remainder of the fleeting phenomenal panorama."

Consciousness is repeatedly described in these pages as 'forceless, evanescent, transient, flimsy stuff,' which, if true, would appear to need the support of the author's extra-conscious existent. But the very awareness of succeeding states, of a continuum, implies that consciousness is something more than these estates, as separate states. The ways in which the author sets about the development of this 'extra-conscious existent' are somewhat difficult to follow. It would appear that this all-important something, or somewhat, at first 'exists in latency,' and it would probably never have become aware of its own existence even had it not been discovered and enlightened by this evanescent, fleeting conscious stuff. It is assumed that this flimsy stuff and the *real* stuff have acquired some method of signaling or signalizing each other. But even this assumption has its difficulties.

The author quotes approvingly the contention of Leibnitz that a correct view of substance is the key to philosophy, and this thought appears to have stimulated him to make these strenuous efforts to bring something of a substantial nature to light. But it may be questioned whether this is the most urgent philosophical problem any longer.

The problems of substantiality, causation, mechanical necessity, living substance as sensorimotor agent, sentiency and purpose in movements, teleology in nature, etc., are discussed in the second part, in conjunction with the author's own views. On some of the current scientific theories, energy for instance, our author remarks: "Here physical science is in fact brought to a perplexing standstill and only a sound epistem-

ology can rescue it from becoming reduced to the pure solipsistic phenomenalism already theoretically reached by the out-and-out mathematical physicists."

Whether physical science is benefited by the introduction of philosophical questions is a point not yet determined. Several of the minor questions brought up here concern special branches of inquiry and so may be left to the experts in the several inquiries to settle.

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Ciò che è vivo e ciò che è morto della filosofia di Hegel. BENEDETTO CROCE. Bari: Gius Laterza e Figli. 1907. Pp. xvii + 282.

This work has been noted in Italy as one of exceptional importance for contemporary Italian thought. It has been viewed even with some alarm as the reactionary *credo* of a writer of great prestige. It seems hardly possible, however, that the book can have the importance in any other land that it has in Italy. Nevertheless, one can but subscribe to Croce's plea that criticism of Hegel be mingled with appreciative justice.

Signor Croce is decidedly more for Hegel than against him. He asserts valiantly that the enduring portion of Hegel is the essential heart of the matter. On the other hand, he shows with no less energy that Hegel's treatment of concrete facts has been a speculative misrepresentation of individuals. The school of Hegel failed utterly to distinguish, in the work of its master, what was of permanent value from what should be discarded, the sooner the better. To separate the good from the bad, Signor Croce comes enthusiastically forward. Modern thought can neither accept Hegel nor do wholly without him. "It finds itself," our author says, "in the same perplexity as did the Roman poet with respect to his lady: *nec tecum vivere possum, nec sine te.*" Something must, accordingly, be done about it.

Croce finds it a strange spectacle that while, as a matter of course, every other particular branch of inquiry has its own method and theory of method, so many philosophers deny just this to their own science and have no word of recognition for the philosopher who has tried most conscientiously and laboriously to determine philosophic method. Apparently Hegel has done this with substantial finality in discovering the dialectic of opposites. This, together with the notion of the concept as concrete and universal, and the theory of degrees of reality, are, Croce believes, the essential part of Hegel, his 'immortal discovery.'

The account of what is good in Hegel suffers from the enthusiasm of the writer's discipleship. His 'reality feeling' for the matter is so overwhelming as to prevent his pausing to think that what is so irresistibly obvious to himself may be far from clear to his reader. He writes, in the pro-Hegel portion of the book, as a convinced Hegelian, using for his illustrations such familiar terms as 'being,' 'non-being' and 'becoming,' but never inquiring into Hegel's ultimate presuppositions. Nevertheless, Croce's examination of what he regards as Hegel's weak side is sincere

and uncompromising. In general, the criticism takes the line of pointing out that the concrete distinctions to which the forms of thesis, antithesis and synthesis are applied, are not related to one another in the same way that these categories are related. The dialectic of opposites is, to be sure, an 'immortal discovery,' but it applies only to conceptual opposites. From being, through non-being, to becoming is a valid progress, but there is no such movement from art, for instance, through religion to philosophy. Hegel "conceived the network of degrees of reality dialectically according to the manner of the dialectic of opposites: he applied to this network of degrees the triadic form which is applicable to the synthesis of opposites. The theory of distinctions and the theory of opposites became for him one and the same thing" (p. 93). And from this procedure there followed two types of consequence. On the one hand, errors in philosophy acquired the dignity of specific concepts, and on the other, specific concepts were presented as partial and one-sided aspects of truth, *i. e.*, as philosophical errors. The first of these consequences determined the structure of the logic, while the second controlled the treatment of esthetics of history and of nature (pp. 97-98).

Croce's final chapter treats of the task of continuing Hegel's thought. This is, apparently, what the rightly constituted philosopher has now to do. England, in particular, is to be congratulated, for there 'the mighty spirit of Georg Hegel has for the first time awakened the minds of the English to speculative life, after they had been for centuries the purveyors of empirical philosophy to the world, and still in the nineteenth century seemed unable to produce greater philosophers than Mill and Spencer' (p. 207).

Croce makes no allusion to the concept of the absolute, nor does he discuss Hegel's treatment of ethics. There is a copious bibliography which includes even 'Some Hegelisms,' by Professor William James.

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Image, Idea and Meaning. R. F. ALFRED HOERNLÉ. *Mind*, January, 1907. Pp. 70-100.

This article is mainly an adverse criticism of the theory which so sharply distinguishes image as psychological from meaning as logical, that the two are cut apart and treated as distinct and separate existences. After pointing out both psychological and logical difficulties which lurk in the shadow of this apparently clear and simple analysis, the author finally grounds his case on the assumption that meaning is inherent in all forms of consciousness, or at least in all ideas and images and in any combination of the same. Every idea or image is an idea or image of something (following the Brentano-Stout consciousness-as-reference-to-an-object program). No image or idea is from either a logical or psychological standpoint absolutely meaningless. A 'mere idea,' and likewise a 'mere image,' is a psychical impossibility. Nor does the image or idea have to be identical in content with that which it means or to

which it refers; *vide*, language. "The distinction between image and meaning would seem to be mainly one of the emphasis with which attention is directed now to one element, and again to another, of a complex psychic whole."

Mr. Hoernlé thus seems to restate the problem of the distinction between image and meaning in fruitful and solvable terms, but I do not find in this article any further description or explanation of this apparently creative shifting of emphasis on the part of attention, except that which is implied in the criticism of Professor James's doctrine of the 'psychic fringe.' According to Hoernlé's view, which is influenced evidently by Stout's criticism, Professor James's account of the matter completely reverses what actually takes place in a normal thought process. Professor James is said to relegate consciousness of meaning largely to the 'fringe,' whereas Mr. Hoernlé holds that normally meaning occupies the '*focus*' of thinking and the sign forms the 'fringe.' To identify meaning with the 'fringe' even borders on solipsism. The 'fringe' that may gather about the word 'Boston,' to quote one of Mr. Hoernlé's illustrations, is not the meaning of Boston. Mr. Hoernlé would apparently be unable to accept the view that Boston is not a place, but a state of mind. "The meaning of Boston consists not of my image of Boston (supposing that I have any images at all), but of a certain town in America, to which those images themselves refer, and of which they themselves are merely 'signs.'"

One thing which seems to be made evident by Mr. Hoernlé's article is that the case of image as psychical content *vs.* idea or meaning as logical is not to be summarily disposed of by boldly and even truly asserting that meaning inheres in all the psychical contents concerned, and that the distinction involved is one of the emphasis of attention. Something of the original problem seems to persist, although with a fairer prospect of reaching a working solution. To assert that all consciousness has meaning is to approach the absolutely meaningless. Meaning at large *means* little or nothing, perhaps even to a mystic. But the problem of determining a meaning is another matter, the problem, say, of getting at the meaning of this particular article. I am willing to offer myself as an illustration, a *corpus vile*, for I am fairly certain that in endeavoring to lay hold of the meaning of the article not only were many of the 'signs,' the printed words, in what I should call the 'fringe' of my consciousness, thus corroborating one of the principles laid down by the author, but also a portion of what I took to be its *meaning*. Much rejoiced should I have been had the meaning, all of it, shone brightly in the focus of consciousness. Praise is due to the clear style of the article which greatly facilitated the bringing of no little of the meaning to the focus of consciousness, but the reader in this instance found it necessary to pay attention from time to time to vague glimpses of meaning, slipping through the loose meshes of the 'fringe,' clear and focal enough, doubtless, to the writer, but elusive, tenuous and marginal to the reader and requiring to be pursued, caught and focalized. Granted that to the 'fringe' is consigned the care of the

more familiar clues and signs of an on-going thought process, is it not also true that we often have to look to the 'fringe' and not to the 'focus' for intimations of new meaning? The clues one sometimes catches sight of out of the tail of one's mind's eye are not to be despised. Again, there is a difference between *holding to a course* in thinking, which characterizes, for example, narration, exposition and argumentation, and endeavoring to *find a course*, which characterizes all exploration and inquiry, whether practical, scientific or philosophic. In the case of *holding to a course*, meaning is conceivably focal in the main, but in the case of *finding a course*, the most meaningful clues may be decidedly marginal.

Closely related to the uncompromising distinction between image and meaning is the widely spread and equally uncompromising distinction between idea and reality which amounts to a distinction between 'mere' ideas and facts, or between ideas that have no meaning or objective reference and those that have. Mr. Hoernlé in criticism maintains his thesis regarding the inherence of meaning and reference even to the point of holding that the most imaginary, not to say impossible, images and ideas nevertheless refer to and mean objects, although these objects may be *unreal*.

Proceeding on the same basis, but closer to Kantian lines, Mr. Hoernlé also attacks that view of the 'ideal' character of experience which makes it abstract and unreal as compared with concrete reality here and now, and in terms of sense perception. It is of especial importance, Mr. Hoernlé points out, to avoid confusing (1) the comparison one may institute between a revival of an experience in the form of an image or idea and the original sense experience of the real object with (2) the analysis of a given sense experience of a real object with a view of showing how thought elements, 'ideal' though they be, help to constitute its objective reality.

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The Relation of Science to Concrete Experience. E. H. HOLLANDS, *Philosophical Review*, November, 1906. Pp. 614-626.

A discussion of the relation between science and concrete experience obviously involves some conception regarding the nature of concrete experience. Accordingly, Dr. Hollands devotes a considerable part of his article to a refutation of the doctrine of *reine Erfahrung*, which holds that science is merely a tool and that its results are true only in an economic sense. As an exponent of this doctrine Münsterberg is criticized on the ground that he draws an untenable distinction between immediate experience and experience as amplified or enriched by scientific labor. The distinction is untenable, because the immediate experience is not amplified merely by way of addition, but by way of reorganization. Immediacy is not an absolute, but a relative, term. By some other writers, like Dewey, this contention seems to be granted. But in this case it is not made clear what it is that causes experience to disintegrate

and thus to set ends for itself. If the end is immanent in the experiential process itself, we have merely a covert idealism; if external to it and presented as a datum in the form of an immediate experience, the position necessarily takes the form of voluntarism. And this being the case, it lays itself open, in the last resort, to essentially the same objection as that urged against Münsterberg.

This refutation of immediacy is offered by the writer as 'an indirect apology for the more usual idealistic view' (p. 616). To many this resort to alternatives is bound to seem extremely indirect. It appears, however, that he is much more directly interested in the fortunes of idealism than in the solution of the problem indicated by the title of the article. In other words, the weight of emphasis does not fall upon the relation of science to concrete experience, but upon the meaning of 'concrete experience.' And so it happens that after the elimination of *reine Erfahrung* its specific view of science is found to have escaped the general destruction by quietly transferring itself to the camp of idealism. Here it dwells side by side with a more conservative doctrine. The latter rejects the suggestion that science is an arbitrary construction, and holds that in so far as it is 'based on the laws of experience in general, its results must be considered in any attempt to give a final account of experience and its meaning' (p. 625). The judgments of science necessarily have a categorical basis of some kind. Without seriously attempting to decide between these two views, the author inclines to the latter. Hegel's way of approaching the problem is still the most profitable. The sciences are steps in the movement of thought and 'find the correction of their abstractness and incompleteness in that more adequate standpoint which it is the duty of philosophy to at least attempt to describe' (p. 626).

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JOURNALS AND NEW BOOKS

REVUE DE MÉTAPHYSIQUE ET DE MORALE. January, 1907. *Le concept de la volonté* (pp. 1-17): HARALD HÖFFDING. — Will can not be an object of simple and direct observation, but it is nevertheless an independent manifestation of the conscious life. It is an elemental fact in the same sense that motions are elemental facts of the physical world. If the analytic method of study is supplemented by a genetic method, we find the phenomena of will displaying themselves in a series of phases which have two abiding characteristics: the direction of activity is always determined by a preference, and the peculiar nature of the individual decides what it is that he prefers. We are, therefore, the more active, the more the causes of our actions rest in our own natures. *Sur une fausse exigence de la raison dans la méthode des sciences morales* (pp. 18-33): A. LALANDE. — It is a mistake to demand of ethics a demonstration of its fundamental facts, for ethics, as other sciences, demands a sensibility for

certain experiences and only takes on rational form when it arrives at some principle from which the empirically observed facts can be deduced. But the facts must be given; reason can not create *ex nihilo*. *Introduction logique à la géométrie* (pp. 34-39): A. N. WHITEHEAD. - This paper is a translation of the introduction to the author's 'Axioms of Projective Geometry.' It deals with the modern conception of geometry as a set of deductions from arbitrary axioms and definitions. Of special significance is the treatment of geometry as a branch of the general science of classification. *La responsabilité objective* (pp. 40-65): G. AILLET. - The conclusion of a discussion of the meaning of responsibility for ethics and law. To objectify responsibility means to transfer its basis from the internal states of the agent to the results of his action, voluntary or involuntary, in so far as they deceive the confidence which others have in him. The notion is rooted in that of a free and autonomous personality, and moral as well as juridical progress consists in increasing responsibilities by taking account of the consequences of our acts and of the demands of the situation rather than of the psychological states of the person at fault. This leads to an idea of collective responsibility, which is the highest objectification and permits the most complete development of personality. *Etudes critiques*: V. Delbos, *La philosophie pratique de Kant*: L. BRUNSCHVIG. *Enseignement*: *La licence de philosophie* (pp. 94-102): ED. GOBLOT. *Questions pratiques*: *Le syndicalisme révolutionnaire* (pp. 103-127): F. CHALLAYE. *Supplement*.

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Koenigsberger, Leo. *Hermann von Helmholtz*. Translated by Frances A. Welby, with preface by Lord Kelvin. Oxford: The Clarendon Press. 1906. Pp. xvii + 440. 16s. net.

Knox, George William. *The Development of Religion in Japan*. New York and London: G. P. Putnam's Sons. 1907. Pp. xxi + 204.

Le Dantec, Félix. *Éléments de philosophie biologique*. Paris: Felix Alcan. 1907. Pp. 295.

Petzoldt, J. *Das Weltproblem von positivistischen Standpunkte aus*. Leipzig: B. G. Teubner. 1906. Pp. x + 152.

Snyder, Carl. *The World Machine*. New York and London: Longmans, Green & Co. 1907. Pp. xvi + 488. \$2.50.

Tenney, Edward Payson. *Contrasts in Social Progress*. New York: Longmans, Green & Co. 1907. Pp. xvi + 415. \$2.50 net.

NOTES AND NEWS

THE following account of a proposal for an improvement of method in the study of sociology is from the *Athenæum* for April 6: "The Belgian Society of Sociology has already given many proofs of its activity, the latest of which is the production of a new journal entitled *Le Mouvement sociologique international*. The first number of this periodical has just been published by De Wit, of Brussels. The leading contribution to it is from the pen of Mr. Cyrille van Overbergh, the Chief Secretary in the Department of Public Instruction, and an authority on questions of higher education. Mr. van Overbergh asks the question, 'Why should not sociologists adopt the practise of comparative study which has been introduced by several recent international congresses?' He follows up this by stating that the diversity of systems and the varieties of terminology perplex the public, and make it disinclined to take up the science of sociology. Only synthetic minds, freed from the trammels of the schools, have, after protracted analysis, discovered under different phrases the same common ideas. They have compared the positive parts of systems and laws, and they then build up, little by little, a new science. In order that the convictions formed by these few diligent workers should pass into the spirit of the partisans of different schools and of conscientious and independent seekers of truth everywhere, it seems to Mr. van Overbergh that the best means of attaining this end would be to reconstruct, for the information of all, the demonstrations made by a few students, and to discover a simple and practical procedure which would permit any one to acquire full knowledge, at any moment, of the work in course of realization down to its smallest details. Mr. van Overbergh's idea, briefly put, is that this procedure might take the form of a list of questions, both general and precise, of which he has drawn up a plan. He suggests in the first place that the answers should be given by the voluntary collaboration of authors; secondly, that the work would be helped by their accidental collaboration in giving these answers, which would result in the eventual rectification of the work done or in supplying information otherwise lacking; while lastly, through interesting, by their own participation in the work, their best pupils or truth-seeking specialists, they would assure a continuance of the record. These answers should, he contends, be published periodically, and in such a way that each of the persons using this inventory might always be able to complete it, and to subdivide its contents so as to suit his own special study. With a view of putting his finger on the possible result of such an investigation in the science of general sociology, Mr. van Overbergh gives an instance of the kind of application to which he would subject his system, and for this he selects the treatise on 'Pure Sociology' by Mr. Lester F. Ward, the well-known American sociologist. That work, as is generally admitted, is obscure. In a series of tables systematically drawn up Mr. van Overbergh gives from this work the answers to the first six questions in his interrogatory, which are (1) definition of sociology, (2) history, (3) its place in the classification of science, (4) method,

(5) classification of social structures and (6) how they are formed. The answers supplied by the author bring out the real teaching and essence of Mr. Ward's book, and go far to demonstrate the practical value of the new method proposed. If it has been possible to dissect with so much precision Mr. Ward's important but involved treatise, a similar task with regard to the works of Comte, Marx, Spencer and others should be relatively easy. *Le Mouvement sociologique international* will continue to publish these analyses of sociological systems. When the work has been carried out by the aid of all leading sociologists, men of science will find themselves in possession of such complete information on each question that they will only have to compare the several elements, to note where they agree or disagree, and to weigh the arguments for each, before arriving, logically and with full knowledge, at their conclusions. But in order that the proposal of Mr. van Overbergh may be crowned with success it is necessary that the sociologists of the world should lend him their support. He therefore invites their cooperation, and will be glad to hear from all interested in the question at either the office of the organ of the Society of Sociology or the Department of Public Instruction in Brussels."

At the recent meeting of the American Oriental Society in Philadelphia Professor Morris Jastrow presented a paper on 'The Science of Divination Babylonia,' which began with an inspection of the liver and an interpretation of its condition. Babylonian influence upon the West is suggested by the similar Etruscan practise. Both peoples showed extreme regard for the liver as the seat of the soul and of life. Professor L. H. Mills, from Oxford, presented a paper which discussed the influence of the Ahuna Vairya doctrine upon the Christian *Logos* idea.

It is proposed to hold at Amsterdam, from the 2d to the 7th of September, an international congress on psychiatry, neurology, psychology and the nursing of lunatics. Anybody interested in this field may become a member. For information, address the office of the General Secretary, Prinsengracht 717, Amsterdam.

THE widow of Paul Tannery appeals to all who possess letters from her late husband to contribute them to the collection which she is making, either for ultimate publication or for preservation in a library.

PROFESSOR FELIX ADLER has been appointed by the Prussian Ministry of Education Theodore Roosevelt Professor in the University of Berlin for the year 1908-9, upon the nomination of the trustees of Columbia College.

DR. CHARLES H. JUDD has been appointed professor of psychology at Yale University.

M. HENRI POINCARÉ has been appointed a member of the council of the observatory of physical astronomy at Meudon.

THE *Psychological Review* proposes to publish a series of 'Philosophical Monographs' similar in form to its 'Psychological Monographs.'

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE CONTROL OF IDEAS BY FACTS. II

IN a previous portion of this paper I endeavored to show, first, that every situation of reflective knowledge involves a discrimination and a reference of existence and meaning, of datum and ideatum; and secondly, that the significance to be assigned to these categories, as well as to their correspondence, is thoroughly instrumental or 'pragmatic,' being relative to the problem of reorganizing a situation of disturbed values. In this portion of the article I propose to go over the ground in more detail, dealing with some explicitness with each phase of the situation. Before taking up the interpretation of the logical categories of fact, meaning and agreement, it may be well to say a few words on the nature of the disturbed and disordered situation for the sake of rectifying which the reflective process takes place. A quotation from a recent critic affords a convenient point of departure. I quote from the first volume of Baldwin's 'Thought and Things': "In the writings of Dewey and his colleagues the case made much of is that of embarrassment and confusion, due to failure of habitual dispositional processes to establish themselves; this is made the starting-point of all new constructions, which come as the establishment of new equilibrium after these crises. But I am pointing out the further case that often such embarrassment or disintegration is not the extreme case; for it often happens that a new and unwelcome object simply forces itself upon us. It is not content with knocking down our fortifications and necessitating our building new ones; it rides full-armed through our walls, and compels its recognition in certain of its characters, *for what it is*—say, for example, a round stone which a child takes for an apple and attempts to bite" (p. 50, note).

I do not profess wholly to understand the supposed bearings of this, but it is clear enough that Baldwin takes the instance of the child's performance as in some way presenting the sort of fact before which the theory breaks down. Since it is precisely this unwelcome fact that Chapter III. of 'Studies in Logical Theory'

(on the 'Datum') deals with, it is clear that Baldwin must have totally misapprehended its point. I accordingly append the following remarks in the hope that they may prevent, for some readers, the perpetuation of misapprehension.

1. 'Confusion and embarrassment' are not terms characteristic of the 'Studies.' Stress, tension, interruption *in* the organized system of value (or in the functions which sustain this value) are the usual phrases. If the terms 'confusion and embarrassment' are employed as equivalents, they must be taken in the same sense; *i. e.*, they must *not* be interpreted as emotions or states of consciousness of any sort, but as applying to a system of action and its values—as when we say the *affairs* of a banker are embarrassed. The emotional perturbations that may accompany this in the banker's personal history are not conceived as primary, but as the organic reverberations of the 'confused' state of a system of activities, in which all sorts of things and persons are involved; prior to reflective analysis, the emotions belong to the conflicting situation, but they never make it up.

2. The system of activities so far as organized or harmonious (having its various elements mutually reinforcing each other) both underlies and overlies the dualism between thought and datum. It is in the conflicting situation that they get set over against each other, the thought being purpose and the object obstacle to realization of purpose. It is child-reaching-and-putting-object-in-mouth that is the total situation in the instance cited—an operation including a variety of values in themselves characterized prior to conflict neither as ideative nor as factual. But when *in* this activity various factors actively conflict with each other, then some stand out as purpose, intent, end: others as data, obstacles, which *through* thinking—through the ideational—are to be reinterpreted and readjusted.

If the child does not interpret the 'hard stone' with reference to an incompatible purpose, end, plan of action, there is no overriding object at all—many a child puts hard stones in his mouth for the sake of doing so. On the other hand, it is only as he sets some result conceived as desirable or intended over against the thing, that he goes on to perform those testing activities, *guided by the intent*, that will result in giving any intellectual content, any character, to that which at first is just interruption in the activity, so that finally the interruption is delimited and defined as round stone. Let the reader put this question to himself: *At what stage of proceedings and how* does the child determine that which forbids his purpose (which *is* purpose once more only in the conflict of activity) to be round hard stone? Not by hypothesis, at the outset; and in the

degree that the purpose does not function as a plan of action in directing exploring (experimental) activities with reference to the nature of the interruption, the thing is not intellectualized at all, but is merely practically rejected—spewed out of the mouth. The normal conclusion of this investigating tentative process is the formation of a new total situation of harmonized values on the basis of mutually reinforcing, instead of conflicting, activities. When one wishes to eat an apple, it is not an overriding but a fulfillment of purpose to throw away what one has found out to be a stone.

3. The references to 'habitual dispositional processes' and to 'forcing itself upon us' seem to give the clue to the source of the misunderstanding. Strictly speaking, the 'us' is irrelevant to the logical problem, which is the problem of the relation of fact and idea. But if one chooses to *shift the issue* from the logical question to the question of the relation of 'external object' and 'me,' the mode of analysis just indicated serves. In any organized system, *qua organized*, there is no dualism of self and world. The emergence of this duality is within the conflicting and strained situation of action; the activities which subtend purpose and intent define the 'me' of that situation, those which constitute the interruptive factor define its 'external world.' The relation *prima facie* is purely practical; its transformation into a reflective or intellectual duality of fact—with described character—and purpose—of characteristic content—is precisely the process of rationalization by which a brute practical acceptance-rejection gets transformed into a *controlled directed evaluated system of action*, in which the duality of me and object is again overcome.

I should like here to refer to what is said in the 'Logical Studies' (pp. 16-17) about the evil of confusing the dualities of different types of situation, the technological, the intellectual, the esthetic, the affectional, with one another. The moment, for example, it is recognized that the logical fact-meaning duality is not to be identified with the technological object-agent duality, a large part of the present confusion of logic and of psychological epistemology clears itself up—it simply evaporates. It is this confusion which is, I believe, responsible for what Woodbridge in the article already referred to¹ calls the end-term conception of mind—which I may paraphrase as the putty-magical-faculty conception; putty, in so far as 'consciousness' is regarded as receptive of impressions; magical-faculty, in so far as it is supplied with a Lockean or Kantian or Lotzean machinery for synthesizing, ordering and objectifying these impressions.

¹ 'The Problem of Consciousness,' in 'Studies in Philosophy and Psychology,' p. 140 ff.

The significance, in the scheme of reality, of an active and centered self or agent or 'me' is a precious product of modern as against ancient life and philosophy. But the offhand identification of this practical agent with 'consciousness' is the source of endless woes. There is, as intimated above, a real point of connection, indeed, between the 'object-me' and the 'fact-meaning' relationships. Through the intellectual function, the 'me' becomes a rationalized, a truly purposive and investigating activity. From something just brutally accepting or brutally rejecting, it becomes something which is directed and put into action on the basis of relevantly conceived aims and relevantly characterized facts. It is precisely this intermediary power, inhering in the reflective, fact-meaning situation, which is meant by the instrumental function of knowledge. In my conception the whole matter reduces itself to this: Is it with respect to reality as inert objects that intelligence functions, so that its duty is simply to copy or repeat them in another realm, or does it exercise its office in respect to reality as activity, so that its duty is to develop this activity in the direction of increased discriminations of value, into more complex and richer situations? If the condition in which reflective knowledge appears is already adequately real, thinking is futilely gratuitous; if it is real so far as it goes, if its lack is simply quantitative, the appearance of thinking, of significance relations, is miraculous and there is no possible test of the validity of any extension or amplification of the given narrow reality which they may happen to effect. Finally the activities that do, as undeniable fact, result from intelligence are on this basis mere tail-pieces, deforming rather than ornamental in character, hitched on to reality as accidental by-products of knowledge. But if reflective thought presents itself as a developing phase of a situation inherently lacking in full reality and has for its purpose to delimit and interpret this situation, transforming its practical conflicts first into recognition of ambiguities and then into a clear conception of alternative possibilities—of intents—which may be experimentally tested, reflective knowing is natural in its origin, verifiable as to its contentions and contents, and fruitful in issue of reality. It lies, at every stage, within the processes of reality itself.

From this sketch of the disturbed or disordered situation within which and for the sake of which knowing occurs, I turn to the various terms of this knowing function as it energizes. The nature of 'fact' or 'existence' first presents itself. Since it is a not uncommon assumption that the theory which interprets knowing pragmatically supplies only a changed phraseology for a Berkeleian idealism, let the point be emphasized that we are dealing here with an intellectual or logical matter, the determination of a true descrip-

tion or delimitation, the assignment of a correct τὸ τί ἦν εἶναι of a given environment or set of facts. It is not the nature of existence or reality *ueberhaupt* which is under consideration, but of *that* reality of which, by assumption, there is an idea, and with respect to which there is to be a true idea. There may be, if you please, hundreds of realities both existing and existing in experience which are of any sort you please, and which are just what they are and just as they are. But we are not discussing such presences, for with respect to them we have and need to have no idea; as to them there is no problem of a true or valid idea; they do not at all come within the scope of reflection as such, or of logic or of any theory of knowledge as an intellectual operation.

Hence, however it may be in psychology and epistemology (I throw this concession in for the benefit of those whom it may concern, rather than on my own account, since I believe that any 'ology at least pretends to be logical), in logic there is no idea so long as there are nothing but realities as such, for logic does not demand the absurdity of duplicating in idea what we already have in reality. But, on the other hand, as soon as there is question of anything which is to be passed upon as true or false, of knowledge in the intellectual sense of that term, there is a reality which is not full reality, since it requires its own supplementation—which is not outward and quantitative, but inward and qualitative—through fulfillment of its intent. If the universe as complete reality is exhaustively present at one time to God or man, then neither God nor man has an idea or thought of it—and this even if the universe itself be only an idea. But if one has an idea of something which is there, then what is there is precisely that which needs for its own reality first interpretation and then transformation through that idea. Any given set of facts of which there is an idea is not yet fully real in itself, but is something which is to be made real through the transformation it receives in the process of fulfilling its own meaning or intent on the deliberate basis of that intent. On the other hand, so far as any one has a portion of reality present to him at any time in such fashion that this portion is adequate or self-included in value, there is no idea or thought of that thing—no knowledge in any reflective sense of the term knowledge. One has then to be constantly on one's guard against slipping the category of reality first in and then out of the reflective situation, not noting the different imports that the term inevitably receives according as it falls within or without reflective knowledge.² So

²In the hope that constant dripping may wear down the stony-hearted, I repeat once more that the idealistic fallacy is the assumption that 'real' reality, *the* 'Truth,' is just what reality is in and for the thought situation;

long as one is not dealing with the knowledge-situation at all, one may have perfectly good realistic systems—realities which are what they are entirely apart from any relationship to the function of intelligence; but an intellectualistic realism—that is to say, a realism which conceives facts within the reflective situation as identical with reality irrespective of it—totally ignores the fact that it is only because independent reality has lost something of its full characteristic of reality that it enters into reflection at all; and that in being set over against its own meaning or intent it is inevitably modified from what it is when it is in complete possession of its value, and that in its reference to this meaning it demands precisely its own further requalification. It ought, I should say, to be axiomatic in logic that the reality concerned in any intellectual situation, in so far as intellectual, is not true and good reality in a final objective sense, but is a sign with respect to it, a sign whose significance still requires to be made out, and whose value (as in the case of any sign) is in the value of the consequences to which it may direct one.

When, accordingly, it is said that fact and meaning, environment and conception, are functional distinctions, it is meant that they are divisions of labor or discriminations of status with respect to the problem of control of activity. Once more any strictly intellectualistic view of the relation of fact and idea is in this dilemma. Idea is either an idea of present fact, in which case it is superfluous, or else it is an idea of some fact not present, with respect to which it is idle to talk of agreement. There is no epistemological straddle by which one can compare an idea with an unknown reality so as to pass upon its truth; while if the fact is already known, it is silly fooling to invent an idea and go through the form of comparing it. But if we take the matter practically, an idea may be formed on the basis of presented fact (which is not the reality of which there is the idea) which may succeed in transforming the given fact, the fact *there*, into a complete reality, the reality in which the idea is true.

The environment is, as we have already noted, not identical with presented fact. If it were, the individual in the woods would not be lost. Or, generically, if the facts, the truths, which the scientist already owns, were *the* fact, *the* truth, he would not be a scientist;

while that of realism is that it is just the same in and for thought as it is outside. The central contention of the account I am presenting is that it is in the reflective situation, and there alone, that reality receives requalification and development of values in a directed way, and that the criterion of knowledge-validity is not accurate reproduction of reality already there—the common assumption of both the idealistic and realistic epistemologies—but the effectual rendering of a value-transformation office. Labels are dubious matters, but it is in this sense that pragmatism is to be understood, if pragmatism is to develop into an acceptable theory of knowledge.

there would be no inquiry, no reflection. Presented facts define the lost traveller; the scientist perplexed. They directly determine a problem, not a solution. Moreover, the contrast with the total reality is a part of the internal content of the given facts, not something external or additional. If it is not a part of them, as given, then at once they monopolize the whole field; the man is no longer a lost soul seeking salvation through reflection. He may esthetically enjoy what is before him. It is as good as anything else. But if there is thinking, aiming at 'making good,' then environment involves the absent as well as the present; and this not externally, say from our standpoint as distinct from that of the traveller (we recognizing that what he sees has to be pieced together with what he does not see), but internally, since relation to the absent is an inherent part of the very quality of that which is present. In other words, that which is present or given is inherently self-discrepant, self-irreconcilable, or actively ambiguous, meaning differing things by turns. That which is most positive or unquestionable is set in a context, and this context colors through and through what is set in it. The absent may determine the presented fact, as presented, either from the standpoint of ground which has been traversed, with which the present territory is continuous—a *Hinterland*—or from that which the traveller wishes to traverse, a foreground. The given, the 'local environment,' so to say, is apprehended as a portion of a larger whole in which, however, it is disjointed. It is given as an element in a disordered reality. And such is the character of all 'facts' about which we think. They are pragmatic, 'things done,' but, as yet, badly done.

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REALISM AND OBJECTIVITY ¹

THAT realism is in process of rejuvenation is a fact which must be apparent even to the casual reader of current philosophical discussions. Apparently this fact is due in part to the conviction of its advocates that they have finally discovered the fundamental reason why earlier realisms have gone astray. Although expressed in various ways, this ultimate reason is ascribed to the identification, in some form or other, of the object of consciousness with consciousness itself. In order to attack this subjectivistic bias at its source, Mr. G. E. Moore insists upon the universality of the distinction between

¹ Read at the meeting of the Western Philosophical Association, in Chicago, March 30, 1907.

quality and the consciousness of the quality; while Professor Woodbridge urges that all consciousness is a relation or 'continuum of objects,' and Dr. Montague finds in 'pan-objectivism' the final cure for this hereditary taint of subjectivism.

As a program for further elaboration this point of view has the merit of clearness and definiteness. Consciousness as an entity or 'stuff' of some sort is incommensurable with other entities and so inevitably leads to an opposition which defies all attempts at reconciliation. It may safely be assumed that this newer realism proposes to transfer all that is commonly called the 'content of consciousness' to the category of objectivity. Even the most private and evanescent of feelings are apparently to be distinguished from the consciousness to which they appear as objects. However much or little this may be deemed a new departure, we may agree that its value depends upon the account which it is able to render of objectivity.

Unfortunately, contemporary realism has as yet made hardly any serious attempt to give to this doctrine a detailed application. In tempting phrase it spreads out before us the philosophic glories of the promised land, but with scarce a hint of the barriers that intervene. While it is doubtless easy enough to distinguish in a formal way between object and consciousness, this distinction by itself leaves the concrete problems precisely where they were. This contention I shall endeavor to substantiate in connection with two of these problems: first, what conception we are to form of those objects which are commonly regarded as subjective; and secondly, whether the quality cognized in sense perception is or is not numerically identical with the quality pertaining to the physical object.

With regard to the first of these problems realism has hitherto failed to make itself entirely intelligible. However much we may insist upon the proposed extension of the term object, it must be conceded that objects fall into two classes, those of which the conditions coincide with the conditions of consciousness and those which exist whether there is an awareness of them or not. To the former belong objects such as emotions, reminiscences and volitions. There is a sense, however, in which this coincidence of conditions must undeniably be regarded by realism as a mere accident. That is to say, it must be affirmed that in the case of both kinds of objects it is possible to abstract from the fact of awareness without thereby necessitating a change in the conception of the object. Or, to put it differently, just as it is possible for realism to conceive a world of material objects in which the conditions for consciousness have somehow failed to become realized, so it must likewise be possible to conceive a world which includes emotions and volitions, but without

awareness. Such objects, I submit, are meaningless. And if so, the reason must be that the relation between awareness and object differs in the two cases. This difference, moreover, must lie, it would seem, in the fact that in the one case the 'object' depends for its existence upon consciousness or awareness, while in the other it does not.

The second problem concerns the distinction between the actual quality of the physical object and the quality that is revealed in sense perception. Whether realism means to affirm or deny this distinction is a matter of some uncertainty. On the one hand we have the much-emphasized proposition that consciousness is neither a substance nor an attribute, but a relation. Unless this is intended to make prominent the immediate or non-representative character of knowing, its significance is somewhat difficult to understand. But on the other hand we are told that 'it can only be the projection of an event on the organism that is the object of a direct perception.'² The meaning of this bit of philosophic profundity I must leave wiser heads than mine to consider. The point that I wish to emphasize is that the situation takes on the form of a dilemma. If the distinction is denied, the conception of objectivity becomes meaningless; while if it is affirmed, we are apparently forced back after all into the subjectivism from which it is the function of pan-objectivistic realism to provide deliverance.

As our point of departure we may take the divergence of experiences which occurs whenever different percipients find themselves in the presence of the same physical object. If there is numerical identity between the quality of the object and the quality perceived, we are obliged to say that the object possesses simultaneously all the qualities revealed in the different perceptions. Or, more specifically, we must be prepared to assert that an object may be both red and gray, both moving and stationary, both square and oblong, both heavy and light; that, in short, our common notions of incompatibility are in the main incorrect. As a reward for our hardihood we are indeed enabled, so far forth, to affirm pan-objectivism. But the objectivity gained in this fashion is a purely verbal affair; it is obtained through the tacit assertion of a most thoroughgoing relativism, through the repudiation of precisely that fixity of character which is necessary to justify the common-sense belief in objectivity. An object that possesses this incomprehensible fullness of character whereby it is enabled to be all things to all men is merely a name for the fact that experience takes place. In reality there are as many objects as there are actual and possible perceptions. Objectivity no longer involves the correlation and mutual determination of qualities, and so retains no significance, save for purposes of

² Montague, 'Two Recent Views of the Problem of Realism,' this JOURNAL, Vol. I., p. 296.

mere convenience. When error ceases to be possible an appeal from the deliverance of experience is never in order, and the object loses forthwith its title to existence.

If, however, we resort to the second alternative and affirm a numerical distinctness between the quality perceived and the quality possessed by the physical object, the case is not much mended. From this standpoint we lose the hope of immediacy which is held out to us by the relational view of consciousness. If we still insist that consciousness is a relation, it seems that the terms of the relation are not the physical objects themselves or their qualities, but the qualities that are perceived. We have now two orders of reality or of objects, instead of one. The corresponding members of these two orders may differ to any extent in quality; they may even exist at widely different periods of time, as in the belated perception of defunct stars. And it seems obvious that the question of the relation between these two different orders introduces anew, and in substantially the same form, the whole problem of dualism or subjectivism upon which the earlier realisms were wrecked.

It may be urged, of course, that the dilemma as stated is based upon a false disjunction. The proposition that the quality perceived and the quality possessed by the physical object must be either numerically identical or numerically different, takes for granted that the only alternative to the immediacy of naïve realism is some form of reduplication. Either the quality of the physical object is known in this immediate fashion or the function of knowing ceases to be a function and must needs itself become an object. This assumption, it may be held, is chiefly responsible for the failure of earlier theories, but is repudiated by the newer realism.

In a sense this objection may be allowed to pass unchallenged. The insistence upon numerical difference does presumably attribute to the quality as perceived a measure of thinghood to which its title is doubtful. Yet this admission does not invalidate the argument. That the actual relation of consciousness to its object is of one given specific character rather than another, we need not at present trouble ourselves either to affirm or deny. What is of more immediate concern at this moment is to show that the specific character asserted by recent expounders of realism represents on the positive side no real advance upon the earlier views; and for this purpose the dilemma is useful. It is a sufficiently accurate statement of the predicament in which these earlier views became involved. It also states the problem which the newer realism has not as yet seen fit to take up with seriousness of purpose. If the relation of quality as perceived and actual quality is not such as our dilemma implies, what is the true relation? It is surely no suf-

ficient answer merely to enter a general denial of the earlier premises. The test of sufficiency lies in the solution of that very problem which served to show that these earlier premises were inadequate.

In substance the criticism that I wish to urge is this: (1) The extension of the term object to events like emotions and volitions fails to account for a difference from other objects which is just as vital and just as significant as is the similarity. (2) Until some third possibility is demonstrated the alternative between the numerical identity and the numerical difference of quality perceived and actual quality must be presumed to be a genuine alternative, in the sense that its significance can not be entirely set aside by merely negative criticism. Merely to show that either or both of the alternatives here suggested are untenable does not in itself lead a single step in the direction of realism, but leads, if anywhere, to skepticism. No doctrine can claim to rank as a constructive view unless it is prepared to make a positive statement regarding the relation between the quality known and the quality possessed by the physical object. No such statement, in unequivocal terms, has as yet been made by contemporary realism. Some definite responsibility must be assumed, some positive theory of objectivity must be maintained. It is certainly to be hoped that realism will remain no longer insensitive to its obligations, nor delay the contribution to the problem of knowledge which it has by implication pledged itself to make.

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GARMAN AS A TEACHER¹

IN considering the sources of Professor Garman's power and influence as a teacher it is not possible to separate entirely the personal from the professional. If this is possible in any subject it certainly ought to be more difficult in the case of a teacher of philosophy. We may at this time dwell on the purpose and methods of his work rather than on the personality that lay behind it, and yet it would merely be a question of emphasis. For the determining note in Professor Garman's teaching of philosophy was his conception of philosophy. It was not for him primarily a subject to be studied for its own sake. I might say it was not studied as a subject at all. He believed that every man who thinks at all must sooner or later face the alternatives which are represented in general by a spiritual or materialistic view of the world and of human action. He conceived it his task to aid young men in facing the

¹ Read at the meeting of the Western Philosophical Association, Chicago, March 29, 1907.

problem squarely, and with a method for its solution. For this purpose he selected his material, planned the order of subjects, and developed the technique of his instruction.

As regards the first, the material of his course, his aim required him to exclude whatever did not bear pretty directly upon the present vital issue. He introduced into his course much material from the history of philosophy, on the one hand, and from physiological psychology, on the other. But it never was introduced *as* history or *as* an interesting process or experiment *per se*. He gave a most profound and illuminating treatment of Berkeley, Hume and Kant, but it was because he thought the present-day student could grapple with the critical problem most sturdily if he worked with the masters, or, as he was fond of saying, 'stood on the shoulders of the giants.' He took up problems of hypnotism, morbid psychology, or psychophysics, in order that students might know the concrete conditions of the relations between mind and body and not speculate vaguely or sentimentalize in place of thinking. Positively, his selection of material changed with the focus of the general thinking of the country.

When he began his work in 1881, New England, particularly the strata from which Amherst College drew its students, was in a period of religious transition. It was no longer a controversy between orthodox and Unitarian, it was a fundamental issue between a religious and a non-religious view of the world and life. On the one hand, both the older Scottish intuitionism and the Emerson transcendentalism were seemingly relegated to the past by the restatement of agnosticism in Spencer's 'First Principles'; on the other hand, the doctrine of evolution as interpreted by Spencer, and in Tyndall's Belfast address of '74, seemed to make matter and force the ultimate reality. As a reenforcement, Spencer's dream theory of the origin of religion seemed not only to the dogmatic theologian, but even to many sincere students, to carry the consequence that religion was only an illusion or a devil worship. Protests were publicly made when W. G. Sumner, of Yale, used Spencer's 'Sociology' as a text for study. It is hard for the younger generation to realize how far we have come in two decades. But in the '80's these issues were in the air. Students had not clearly formulated them, but they responded strongly when the opportunity was afforded to deal candidly and squarely with the real problems of the day. In the last decade the selection of material had been determined by another issue. In conversation five years ago Professor Garman said to me: "I don't find that students are troubled or interested now by the older epistemological or metaphysical questions. It is the social question, and I have changed my course to a new focus."

Material from spheres of economics and sociology was utilized, and the student was given at least a guiding thread with which to tread the maze of present business and society. To use the term at present in vogue, Professor Garman was pragmatic. Pragmatic, too, was the method of presenting the material. "Give them the light first," was the maxim of Julius Seelye, President of the College, and a dominating intellectual and religious personality in his time. But Garman was convinced that the light of reason was not sought or appreciated by a college student unless he first felt some need of it. It is not merely evil deeds which make men choose darkness. Conceit, laziness, distrust, prejudice, pietism and obscurantism, any or all of them may prevent an ardent welcome. It would not be quite a fair analysis to say that, like the evangelical preacher of former days, Garman thought conviction of sin necessary to the joy of salvation, and yet there was a similarity. The logical results of typical attitudes were shown, and the futility of blinking or evading the issues forced home, until a large proportion of the class were anxious to investigate and willing to work hard for their results.

This preliminary process was naturally to a considerable degree negative. The old complaints made against Socrates were occasionally heard. Partly for this reason, Professor Garman was at one time accustomed to ask his students not to discuss their work with others until they had reached the constructive portions—a caution which to those who did not understand the whole situation seemed to give a sort of esoteric character to the course.

The use of pamphlets, on which Professor Garman laid so much stress, was a device incidental to the general method of study through problems. To meet the inertia and friction caused by the increasing attention given to athletic and social interests he entered upon a plan which meant a large expenditure of money, from a moderate salary, and an enormous expenditure of time and labor. The most vigorous and lucid statement of some phase of the problem in hand was to be made accessible to the class. Furthermore, only the problem was to be given—not the solution. This they must try to work out. Every one who conducts a laboratory course aims at something of this. But the usual technique in philosophy has been to rely for the classic problems upon the texts of the classic authors, and for modern problems upon lectures. This may answer for the mature student. But for large classes of undergraduates, who are subject to all kinds of diversions, it is liable to objections.

To place in the hand of every student a complete copy of every author who has made some stimulating statement is expensive. To spend a class hour in writing lecture notes seems too archaic a method of spending the time to appeal to an up to date under-

graduate. And I wonder if an instructor ever gives material in this fashion without a sort of reversed Rip Van Winkle sense that he has reverted to the medieval methods in use before the invention of printing.

On the other hand, while to listen to a lecture without taking notes may have a value for certain purposes, no one likes to depend upon such a way of getting material for careful analysis. He wants to have the exact words before him for repeated perusal. Failing to convince the trustees that this laboratory equipment for philosophy was as essential as a laboratory equipment is for physics or chemistry, Professor Garman himself bought and installed in his house a printing press, hired a compositor for considerable periods, and for several years with the help of his wife did the press work and binding himself. His pamphlets were partly extracts from authors, partly his own statements, criticisms and outlines. Any pamphlet was cast aside the moment a better one could be substituted, or when change in the focus of interest made another treatment desirable.

Nor did the technique stop with pamphlet and discussion. The students were frequently made to write out careful analyses, or to try their strength in meeting a question proposed. Their efforts were criticized with a detail which aimed not merely to tell the writer that he was in error, but to show him just where and how, and thus to help him to the right method. A teacher is apt to consider a course as satisfactory if he himself reaches some definite goal. Professor Garman's standard was more exacting. He did not consider the course a success unless every member of the class reached—not, indeed, an identical result, but a method, an ability to weigh evidence, a spirit of intellectual honesty, patience and thoroughness that would neither jump at conclusions, balk at difficulties, nor shy at novel and unwelcome truths.

As Professor Pierce has written: "To his own mind, I have heard him say more than once, it was not so much the definite solution to a problem that was the great end in view as the equipment of the student with a method of thought by which any and all problems could be confidently attacked. To bring his students to an intellectual plane where they were in possession of an ineradicable conviction that the processes of thought, if rightly used, could be made to yield them the truth, was, I believe, one of Professor Garman's most cherished ambitions. To teach a student how to weigh evidence, and to arouse in him the conviction that he could do his own independent weighing and that truth's ultimate appeal lay in his own mind,—these were the constant endeavors of the class-room and the private conversation. And so successful were these efforts that

whatever burden of doctrine the Amherst student of philosophy may have carried away with his diploma, he at least carried away with him the dignified assurance that he possessed the efficient instrument of a sound philosophic method with which to meet the perplexities of whatever kind of life he might be called upon to lead. This, I believe, is one of the crowning achievements of Professor Garman's work."

A noteworthy trait in Professor Garman's class-room work was his sympathetic reception of objections and appreciation of difficulties. Instead of minimizing an objection he was more apt to restate it for the student so as to bring out much more than the student had seen in it. If he found that there was serious difficulty, I have known him many a time to go home, change entirely his plan of campaign, bring to the class next day a new pamphlet that would start a new line of thought, and finally, a fortnight later, bring the class up to the previous difficulty, but now with a point of view for which the difficulty was no longer serious. It was a part of his strategy never to let his students feel themselves hopeless before difficulties, never to leave unconquered strongholds in his rear, never to ask students to accept anything on his authority.

No notice of Professor Garman would be at all adequate which did not speak of his extraordinary charm of illustration. The explosive power of a new affection is an obvious psychological truth, but the student who saw this through the symbol of the oaks which kept their leaves through all the winter's storms but shed them at the first start of the new life of spring, found it a more vital fact than if stated in general form only. The physical sciences were constantly drawn upon; the unity of the cosmos and a spiritual interpretation of reality seemed subtly evidenced by the analogies and symbols that were so effective in giving vividness of imagery to the most profound conceptions.

We might go on to add this or that which contributed to Professor Garman's success,—but after all if these that we have named and others that might be named had not been the genuine expressions of a great mind and heart, seeking and finding its life by a certain inward necessity in the Socratic Eros,—they would have become mechanical and failed. It was because there was first of all this great personality, with a genuine interest in every student, that Professor Garman has achieved the immortality which, Plato tells us, every great soul craves, the living on in ideals, aspirations and enthusiasms that it has begotten in other souls.

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REVIEWS AND ABSTRACTS OF LITERATURE

Benedetto Croce's Aesthetik als Wissenschaft des Ausdrucks. Translated into German from the second Italian edition by KARL FEDERN. Leipzig: Seeman. 1905. Pp. xiv + 494.

For those students of esthetics who find German easier or pleasanter than Italian, this volume is admirably suited. The translation is apparently both exact and readable. Croce's peculiar theories on matters of esthetics contain much that should interest every student. The repeated discussions of the resemblances and differences between esthetic and cognitive experiences are highly suggestive.

The great bulk of the volume is devoted to a history of esthetics, a study in some respects admirable, but in others very unsatisfactory. Its chief difficulty seems to spring from the writer's endeavor to notice every theorist that ever lived. Yet this very fact gives the history a special value to advanced students, who may get their bearings most satisfactorily in such a compendium. The long, elaborate bibliography at the end of the book is very valuable, though chiefly because of its references which are unknown to English readers.

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The Energies of Men. WILLIAM JAMES. Delivered as the Presidential Address before the American Philosophical Association at Columbia University, December 28, 1906. *Philosophical Review*, January, 1907. Pp. 1-20.

Professor James will have it that there is a 'world behind the looking-glass,'—a mental region unpenetrated by the ordinary methods of psychological analysis, more interesting and more socially significant than those disclosed by the texts or the current methods of experimental psychology.

The main thesis of this paper is that we habitually live inside our limits of power, and that it is possible to develop a technique whereby we may habitually live on higher levels. He says: "There are in every one potential forms of activity that actually are shunted out of use. The existence of reservoirs of energy that habitually are not tapped is most familiar to us in the phenomenon of 'second wind.' Ordinarily we stop when we meet the first effective layer, so to call it, of fatigue. We have then walked, played or worked 'enough,' and desist. That amount of fatigue is an efficacious obstruction, on this side of which our usual life is cast. But if an unusual necessity forces us to press onward, a surprising thing occurs. The fatigue gets worse up to a certain critical point, when gradually or suddenly it passes away, and we are fresher than before. We have evidently tapped a level of new energy, masked until then by the fatigue-obstacle usually obeyed. There may be layer after layer of this experience. A third and a fourth 'wind' may supervene.

Mental activity shows the phenomenon as well as physical, and in exceptional cases we may find, beyond the very extremity of fatigue distress, amounts of ease and power that we never dreamed ourselves to own, sources of strength habitually not taxed at all, because habitually we never push through the obstruction, never pass those early critical points. When we do pass, what makes us do so? Either some unusual stimulus fills us with an emotional excitement, or some unusual idea of necessity induces us to make an extra effort of will. *Excitements, ideas and efforts*, in a word, are what carry us over the dam."

The excitements which break up the 'habit-neurosis,' and 'carry us over the dam,' are usually connected with the elemental emotions of love, anger, crowd-contagion or despair. The effect of effort, or exercise, in keeping the higher levels constantly in reach is illustrated by the methodical ascetic discipline of the Yoga systems of India; the force of ideas as dynamogenic agents is shown in connection with such phrases as, honor, the union, fatherland, liberty, etc., and finally, the effect of conversions in unlocking energy is illustrated by the various forms of modern spiritualism. "*Conversions*, whether they be political, scientific, philosophic or religious, form another way in which bound energies are let loose. They unify, and put a stop to ancient mental interferences. The result is freedom, and often a great enlargement of power." The new religion involves emotional strain and the relaxation of old-time inhibitions, where the old religion has settled into 'habit-neurosis,' and from this standpoint it would seem that any religion is good so long as it is new.

From the standpoint of the sociologist, the questions raised by Professor James are closely connected with the question of control. The senses and instincts were developed in animal life to the point of securing, through movement and coordination, a control of the outside world sufficient for the purposes of bare existence, and in mankind the simple coordinative, catch-and-kill activities are extended to the region of invention, through the aid of mental abstraction. A secondary form of control, social in its nature, begins in marriage and gregariousness, and results in a more complete control of environment through cooperation. The energies of men, stimulated by natural and social impulses, have progressively come into control of the physical environment, but the relations of men to men are still so unstable and so uncontrolled that the future of society and the stability of social forms are at present problematical. Instance race prejudice, standing armies, and the conflict of social classes. The possibility of a methodical rather than an instinctive *détente* of energy, and at the same time a higher level of energy, is, therefore, of peculiar interest to the sociologist.

In the same connection it seems possible that a fundamental, and perhaps a causal, difference in the progressive and non-progressive races lies in the more binding nature of the inhibitions in the non-progressive and the freer reaction to stimulation in the more progressive. Democracy and freedom of thought mean, in reality, a relaxation of the binding force of habits. In its early history the race made persistent, serious and

successful attempts to inhibit modes of behavior on the part of individuals which were unfavorable to the life and well-being of the group. This resulted in a code of 'thou shalt nots' essentially the same the world over. This was at that time essential, even more essential than inventive and scientific activities perhaps, because social solidarity was essential to life itself. But there is no doubt that what we may call customary inhibitions tend to survive after they have outlived their usefulness, and act as checks to spontaneity.

Another point of interest in the theory of Professor James is its bearing on a theory of social progress which I venture to call the theory of pace-making. He points out that the individual may learn or be forced by circumstances to push the barrier of 'habit-neurosis' further off, and live in perfect comfort on much higher levels of power. "Country people and city people, as a class, illustrate this difference. The rapid rate of life, the number of decisions in an hour, the many things to keep account of in the busy city man's or woman's life, seem monstrous to the country brother. He doesn't see how we live at all. But settle him in town; and in a year or two, if not too old, he will have trained himself to keep the pace as well as any of us, getting more out of himself in a week than he ever did in ten weeks at home. The physiologists show how one can be in nutritive equilibrium, neither losing nor gaining weight, on astonishingly different quantities of food. So one can be in what I might call 'efficiency-equilibrium' (neither gaining nor losing power when once equilibrium is reached) on astonishingly different quantities of work, no matter in what dimension the work may be measured. It may be physical work, intellectual work, moral work or spiritual work."

What is here true of individuals is most certainly true of the race, and 'pace' is a more fundamental, or at least more dynamogenic, statement of the principle of progress than 'conflict,' 'contract,' 'imitation,' or any of the classical phrases. With crowded population, difficult existence, multiplied suggestion, incidents, inventions, stress and strain, more to lose and more to gain, the race, like the individual, strikes a faster pace. This principle of pace (most perfectly illustrated in competitive games) is a fundamental principle of civilization as opposed to savagery.

Another immediate value of Professor James's paper, on the social side, is the disclosure of the technique of the Hindu Yoga training, and its patent bearing on educational theory. As Professor James remarks of Christian Science and other forms of spiritualistic manifestation, 'our scientific education has unfitted most of us for comprehending the phenomena,' but we have here an exposé of method which, when we get around to working it out, will be of tremendous pedagogical importance. No one, I believe, can read Professor James's exposition of the Hindu system of training, in connection with the remainder of his paper, without the reflection that a great step in educational method would be made if we should attach more importance to the technique of attention in handling the child, and less to fixing traditional inhibitions.

It is fortunate for the scientific world, and for the world at large, that

Professor James has no 'fear-thought,' and surely we all hope that he will continue to open up a new vein of thought every little while.

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La mémoire des rêves et la mémoire dans les rêves. N. VASCHIDE and R. MEUNIER. *Revue de Philosophie*, October and December, 1906. Pp. 359-372; 626-650.

In these interesting articles the authors propose to compare the results of their own findings in an experimental study of memory of dreams and memory in dreams with the conclusions reached by preceding writers. They seem to think that all previous students of the subject have carried on their study in a casual and occasional way. Their citations from previous writers include only French authors. There is no reference to dream literature in other languages, except passing allusions to Maudsley and de Sanctis. Here is the list of authors whose writings our investigators deem worthy of attention: Hervey de Saint-Denis (1867), Maury (1878), Max Simon (1888), Tissié (1890), Goblot (*Revue Philosophique*, 1896), Tannery (*ibid.*, 1898), Egger (*ibid.*, XLVI.), Dugas (*ibid.*, 1897), Beaunis (*American Journal of Psychology*, 1903), Vaschide on 'Mourly Vold' (*Revue de Psychiatrie*, 1904), Rousseau (*Revue Philosophique*, 1903), Duprat (*Revue de Psychiatrie*, 1905). The authors state that their experiments and conclusions were communicated to the Société de Psychologie de Paris in June, 1906.

According to our authors, Saint-Denis trained himself to remember his dreams. They agree with him that this effort did not superinduce more frequent dreaming, but increased the ability to remember dreams. Last night of failure to remember dreams, says Saint-Denis, was the 179th. For the first six weeks he found some trouble, but later on he could recall a dream after several days had passed. He concludes, as a result of his experience, that 'no sleep without dreams' is an axiom of dream psychology. He had himself waked during thirty-four consecutive nights, and always caught himself dreaming. He does not state how he was waked. Our authors make much of the mode of waking the subject, but they do not raise the question in this place. Saint-Denis experimented on a friend. Woke him from a deep sleep (method not mentioned) and asked him about his dreams. The friend at first denied having dreamed, but after the cue 'soldier' was given him, he remembered the dream which had been excited by the experimenter's words of military command given during the subject's sleep. On the strength of this experiment and his own experience, Saint-Denis forthwith concludes that all people dream as he and his friend do! The experiments, of course, do not prove that there is *always* dreaming going on during sleep. The experiments of our authors, to be mentioned later, seem to them to corroborate the 'no sleep without dreams' theory. Saint-Denis acquired the power of recalling dreams in his dreams. He seems to think that there are various 'dream negatives' (*clichés*

souvenirs) that get reproduced over and over again; that memory, therefore, plays a predominant rôle in dreams. *Nihil est in visionibus somnorum quod non prius fuerit in visu*, is his dictum as to dream images. He thinks memory is exalted in dreams, especially in dialogue forms, an illustration of which he gives. The present writer has noticed the same apparent exaltation of memory in normal conditions of waking reminiscence (especially memories of childhood), as well as in recall of long-forgotten and minute memories during emotional stress.

Our authors pronounce Maury's studies on dream life 'classical.' These certainly agree pretty well with their own conclusions. They quote a dream of Maury's which looks very much like a real dream in a dream. In his dream he seemed to remember the scene as one he had witnessed recently when he had visited the 'same place' with his brother. There was nothing true in the dream, and the brother had been dead ten years.

Max Simon's book is pronounced interesting, but popular. Out of his collection are singled out the well-known stories from Macario and Coleridge. According to Max Simon, dreams often have a profound influence on every-day life. Vaschide and Meunier make the suggestive remark that young women sometimes intoxicate themselves with day dreams about their night dreams! Simon, like the other writers mentioned in these articles, is credited with the belief that there is paramnesia and hypermnnesia in dreams. But, let us note, memory is notoriously unreliable in normal life; and hypermnnesia is of frequent occurrence under emotional stress as well as through accidental cues furnished by daily life.

From Tissie's experience our authors quote two very suggestive cases. In one, the subject has a dream wherein he passes an esthetic judgment of *bourgeoise*. This dream is recalled to his mind when he sees next day a young man embracing his sweetheart in a public place. In the second case, the subject finds himself during waking hours suddenly and automatically saluting a casual business acquaintance whom he would not ordinarily have spoken to. No sooner was this act performed than he recalled a dream of a night or two before in which he had figured as amicably associating with this same comparative stranger. This case seems to show clearly the influence of the dream life on waking moments of 'abstraction,' wherein subconscious results can easily occur.

In opposition to the contentions of Le Lorrain and Egger (p. 371), Clavière is cited as reporting what appears to be a disproof of the claim that dreaming is more rapid than normal mental action. Clavière has one of those impertinent and persevering alarm-clocks that rob one of all excuse for oversleeping himself. He was dreaming in quite dramatic fashion when his clock gave its first warning. He woke up enough to note the exact phase of his dream and then went on dreaming. When the second ringing started up, Clavière woke to clear consciousness and noted the time. Knowing the interval between the two alarms he could easily calculate how long his dream between strokes had taken. He

found that the interval was almost exactly what would have been occupied by a real dramatic performance. That the dramatic unities were preserved in this particular and unusual case does not give us the right to draw conclusions as to the rapidity of dreams in general. It is more than likely, however, that dreaming can not outstrip day dreaming, castles-in-Spain and the like. It may well be true that elaborately detailed action, whether in dreams of the night or fancies of the day, will take up time not greatly different in amount from that taken by real action.

Goblot holds that all dreaming occurs during the transition from sound sleep to waking. Sudden awakening may even bring 'continuity' between the two states. Their images get mixed or even work together. "No dreams in sleep; always dreams as we are awaking" (p. 627). Our authors are inclined to admit this of the *memory* of dreams in untrained or 'unaided' dreamers, but otherwise hold that dreams occur during deep sleep. They fail to see why the mixing of dream images with waking images, on some occasions, should invalidate the general reliance to be placed on the memory of dreams, especially under experimental conditions.

Tannery holds that all dreams are connected with anterior, but forgotten, dreams. Egger criticizes this opinion, but as Tannery's test cases are not given, the sharpness of the discussion's point is somewhat blunted. However, Egger gives a case which he thinks would be a test case for Tannery, but which he explains on different principles. Egger has a dream about an operating room, and it seems to point back to a previous dream. But he explains the initiation of it as due to a peripheral disturbance quite sufficient to account for it, and thinks that the apparent reference to a previous and forgotten dream can easily be accounted for by previous experience (p. 628 f).

Dugas shows a commendable tendency in declining to separate dreaming and waking too sharply. According to MM. Vaschide and Meunier, he makes the following points: Dreaming and waking become confounded at the point when one believes himself awake when he really is not fully awake (p. 629). Dream images have no essential differentia. Half-sleep (dozing) unites dreaming and waking. They are confounded when one is suddenly awakened. The type of somnolence is 'waking broken by slumbering or sleep interrupted by dreams.' Awakening is a displacement of the field of attention (p. 631). We distinguish dreams from waking states by the superior automatism of the former. Physiological automatism corresponds to profound sleep without consciousness, and psychological automatism to the dreaming phase. The unconscious cerebration of waking hours becomes automatic and is continued as such in dreams. Beaunis (*American Journal of Psychology*, 1903) criticizes Goblet, Egger and Dugas. He holds that by leaving out doubtful cases, we can easily distinguish dreams from retrospection of the waking type. But the root of the question seems to be, By what sign do we recognize 'doubtful cases'? Good observers sometimes express considerable hesita-

tion in deciding whether a certain memory had its origin in dreams or in ordinary retrospection. And their hesitation is due simply to their failure to place the recalled circumstance. They have no feeling to guide them, and the mental data fit well into either phase of mental life. Such cases are not subjectively 'doubtful,' but are objectively anomalous.

Beaunis holds that there are three phases of dreaming: (1) excitation, (2) memory, (3) irradiation. The brain side of these 'phases' is, of course, not known.

Passing by various interesting statements from Beaunis, such as the strong influence of vocation on the content of dreams, it would seem well to sound a critical warning in regard to two statements made by MM. Vaschide and Meunier in connection with their study of his views. Two highly doubtful conclusions are regarded by our authors as 'proved.' The first of these affirms, on the authority of Mourly Vold, that the dream experience of flying is due to 'genital influences.' It would take a very wide induction to persuade a careful man of science to accept this conclusion. Indeed, not a few young men who have dreams of an erotic nature dream about flying in contexts very far removed from the sexual atmosphere. Nor is it safe to intimate, as our authors do, that older men never dream that they are flying.

The second highly doubtful assertion made by our authors, this time on the authority of de Sanctis, is that we never dream about loved ones who have died recently. Exceptions to this 'induction' are numerous. A few weeks ago a certain lady of my acquaintance died. A few days afterward her husband dreamed that he was climbing a ladder to heaven and that he had just reached the top and was almost ready to faint with fatigue when hands were stretched out to him, seized upon him and pulled him in. The husband believed the hands were those of his wife. When this dream was spontaneously told me, I casually said to my informant, the deceased lady's sister, "Some say we never dream about the recently dead." She responded earnestly and warmly: "That isn't true, for I have dreamed all night about my sister, night after night, ever since she died."

We now come to the experimental part of the study. M. Vaschide had suggested at one time to M. Rousseau, and at another to M. Duprat, that they should experiment with suitable subjects in order to find out whether or no there was sleep without dreams. M. Rousseau tried only one subject, a young 'neuropath' aged twenty-five. This young man showed alternations between deep sleep and dreaming. His second dream period seemed to connect with his first to some extent, and the feeling of *déjà vu* occurred in the second period of dreaming.

M. Duprat tried his hand on two children, one thirteen years old and the other ten. He found three stages: deep sleep, dreams, light sleep. These children's dreams show *la logique et la continuité*. Duprat thinks that memory was the chief agent in the dreams, and that the material was drawn from the experience of the day before. The dreams, vividly remembered in detail at first, get 'intellectualized' and schematized after-

wards in recall, and then are forgotten altogether. This is not unlike normal waking experience. The imaginative features drop out first, leaving the 'intellectual framework.' Duprat sums up his conclusions as follows: "The rhythm of mental life in the child seems to follow exactly the rhythm of the physiological life itself."

Before detailing their own experiments our authors sum up what they believe to be the chief results of their scrutiny of the 'casual and anecdotal' writings of others: (1) Hypermnnesia and paramnesia are characteristic; (2) dreams most commonly remembered are those of the morning, of waking time and of light slumbering; (3) dream memories are frequently confused with those of the evening before. On the whole, our authors seem to accept these conclusions, though urging (*contra* Goblot) that dreams are not typically phenomena of 'transition,' and that instead of continuity between dreaming and waking we have 'oscillations between states of attention and distraction.' They believe that the *position* of the dream in the mental life is of fundamental importance, and to determine this their efforts are bent. For, they say, it is not enough to analyze dreams, as the current method does, but it is also necessary to study the individual when he is in deep sleep, and by a proper method of waking him and questioning him, find out whether he has been dreaming and what his dreams are. They think that their experiments show that there is no sleep without dreams. Let us turn to the experiments. The subject, a psychologist, was sharply awakened, after being regaled in his sleep by a slight musical repast furnished by a gramophone, whose virulence had been somewhat toned down by the blanketing of its trumpet. For four minutes the subject asseverated, "I dreamed not"; but the sly experimenters casually remarked on the beatific expression of his countenance just before waking. Said they, "You looked as though you heard beautiful music." Then the subject looked surprised, and thought it queer that he *did* remember a bizarre connection of images, with a vague background of disconnected images of various orders of sense. "They form cycles in my thought, but in each cycle there is music. . . . Sort of parallel dreaming." Sounds are the *Leitmotiv*. Our experimenters remark, *à propos* of method, that the subject should not be waked by calling. Speech is too full of suggestion. If the experimental conditions are well looked after, we shall find, say they, that the dreams of deep sleep have clear images unconnected with the waking state, but that the images of light sleep get mixed with those of the awakening. In their judgment, 'previous authorities' have really reported half-dreams, intermediate states, where there has been an 'oscillation' between images of sleep and those of waking.

They go on to conclude that dreams and images get together by 'mediate association,' without remembrance of the middle term. There seems to be a sort of 'emotive affinity' between the *Leitmotiv* of a dream and some of the images passing in the stream of dream consciousness. This is well shown, in the experiments, when the subject gives the dominant note of his dream in his first words after being awakened; other images seem simply to clear up the principal image. Our authors

seem to think this psychical mechanism *sui generis*—a 'very particular form of mediate association.' They are inclined to think that there is some analogy with certain forms of aphasia described by Vaschide and others. Here is the conclusion of this matter, according to MM. Vaschide and Meunier: All dreams are characterized by *cette mise en relief spontané des éléments substantiels du rêve* (p. 648).

According to these investigators, nightmare is to be classed with experimental waking. They seem to think that there is little variation in nightmare themes. As a final topic in their report, MM. Vaschide and Meunier discuss briefly the memory of a dream *in a dream*. They take this phenomenon to be one of simple auto-suggestion, and declare that it is 'never' found in experimental cases or in nightmare. Without making a point about explaining a complex phenomenon by one still harder to explain, we are certainly justified in doubting our authors' right to decide what may or may not take place in nightmare.

These suggestive studies indicate what is becoming clearer and clearer as the years go by, *viz.*, that we may expect to find many of the explanatory principles of hypnosis, hysteria, multiple personality and various other neuroses and psychoses by means of close observational and experimental studies of sleep and dreams. And our authors seem to be right in thinking that one of the main points to be studied is 'the memory of dreams and memory *in dreams*.'

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The Province of Functional Psychology. JAMES ROWLAND ANGELL. *The Psychological Review*, March, 1907. Pp. 61-91.

In a characteristically lucid manner Professor Angell sets forth three aspects of the psychology known as functional. The three view-points set forth are really, as the author shows, but three aspects of a common tendency in psychological treatment. The old and in part still new structural psychologists took the moment of consciousness as an isolated totality and proceeded to dissect it in the manner of the scientist dealing with a rock or an animal. Of note in this tendency are Wundt and Külpe. If, however, we look into other fields of science we find that where consciousness is concerned, as in the study of biology and physiology, an attempt is made to consider it as a factor in use and efficiency. A similar tendency is found nowadays in psychology, but there is as yet no decidedly harmonious treatment in this connection. Professor Angell neatly gives the three methods of treatment which are styled functional. As he says: "We have to consider (1) functionalism conceived as the psychology of mental operations in contrast to the psychology of mental elements; or, expressed otherwise, the psychology of the *how* and *why* of consciousness as distinguished from the psychology of the *what* of consciousness. We have (2) the functionalism which deals with the problem of mind conceived as primarily engaged in mediating between the environment and the needs of the organism. This is the psychology of the fundamental utilities of consciousness; (3) and lastly we have functionalism described

as psychophysical psychology, that is, the psychology which constantly recognizes and insists upon the essential significance of the mind-body relationship for any just and comprehensive appreciation of mental life itself" (pp. 85-86).

Of course, as the author points out, in dealing with structural elements we can not wholly do away with the *whence* and the *whither* of such elements, and so even in structural accounts some functionalism may exist. The third view at first sight is not evident in so brief a statement, but it is fully developed by Professor Angell. In questions of volition where elements other than the cognitive are concerned, the body as a mediating agent comes into question. This opens the field of physiological explanation and of discussion concerning the physiological substrate. So we have from this point of view a possible psychophysics.

The paper ends with a synthesis of the three aspects. If we consider consciousness as functioning to facilitate reaction, adjustment and control, this involves process rather than structure, action in addition to thought, physiological change in addition to qualitative variation in any conscious moment. The three aspects really belong together and ought to be considered in any functional treatment of consciousness. The paper is a noteworthy addition to discussions of similar purport by Titchener, Münsterberg, Warren and others.

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NEW YORK CITY.

JOURNALS AND NEW BOOKS

BULLETIN DE L'INSTITUT GÉNÉRAL PSYCHOLOGIQUE. April-June, 1906. *Les expressions extérieures et profondes des émotions chez l'homme et les animaux* (pp. 83-94): FRANÇOIS-FRANCK. - Cerebral excitation as in 'psychic shocks' and 'cerebral surprise' acting on the body gives rise to emotion. The point of departure is cerebral change, and not body disturbance. *Une simple observation de l'amour du jeu chez un chien* (pp. 95-97): BILLARD. - This account deals with an actual observation one sunny day of a dog at play upon the seashore. The dog played with a stone by throwing it into the air. *Contribution à l'étude des rapports éthologiques des crabes et des actinies* (pp. 98-103): H. PIÉRON. - Some crabs get behind a sea anemone if the latter is near at hand, and occasionally a sea anemone will get lodged in a crab's claw. But this does not give foundation to the report that the crab uses the anemone intentionally as a weapon of defense. *De l'autodidaxie comparée* (pp. 104-113): BARON. - Self-instruction is a universal fact, but found especially in man. With animals living to a great age it exists to some degree, but most animals function instinctively. In plants adaptation is in the nature of a trophism, and in such cases the plant form is of a nature higher than the mere parasite in which adaptation is conditioned by the life of another plant. *L'individualité psychique chez les vers, les échinodermes et les insectes* (pp. 115-125): G. BOHN. - In-

dividuality does not readily admit of definition. With worms individuality is in close connection with the development of the peripheral organs of sensation. The same is true of echinoderms and insects. The periphery is the point of departure for motor impulsions. *Les instincts et le psychisme des araignées* (pp. 127-146): LÉCAILLON.—Most of the actions of spiders can be explained by instinct and a kind of automatism. We should not read too much into the animal consciousness. *Contribution à la psycho-physiologie des actinies*. (pp. 146-169): PIÉRON.—This is an experimental study with drawings of a sea anemone. In prehension the tentacles curve round the stimulating object. Some of the tentacles surround food matter and draw it into the mouth, which contracts. Various other movements are studied. All the parts of the animal represent an autonomy. There is, however, a nervous system. This is not a system of centralization, but a connecting center by which certain motor interrelations are preserved. *Nécrologie* (pp. 171-177)—A sympathetic account of the life of Pierre Curie, 1859-1906. *Livres offerts à la bibliothèque de l'institut général psychologique* (179-183).

MacCunn, John. *Six Radical Thinkers: Bentham, J. S. Mill, Cobden, Carlyle, Mazzini, T. H. Green*. London: Edward Arnold. Imported by Longmans, Green & Co. 1907. Pp. 268.

Mendell, E. *Text-book of Psychiatry*. Translated by W. C. Krauss. Philadelphia: The Davis Co. Pp. xiv + 311.

Montgomery, T. H., Jr. *The Analysis of Racial Descent in Animals*. New York: Henry Holt & Co. 1906. Pp. xi + 311.

Pearson, Norman. *Some Problems of Existence*. London: Edward Arnold. Imported by Longmans, Green & Co. 1907. Pp. vii + 168.

Rashdall, Hastings. *The Theory of Good and Evil*. Two volumes. Oxford: The Clarendon Press. 1907. Pp. xx + 312; xv + 464. 14s. net.

Schultze, Martin. *Studies in German Romanticism*. Part I: *Repetition of a Word as a Means of Suspense in the Drama under the Influence of Romanticism*. Chicago: The University of Chicago Press. 1907. Pp. 58. \$0.25 net.

Windelband, Wilhelm. *Lehrbuch der Geschichte der Philosophie*. Vierte durchgesehene Auflage. Tübingen: J. C. B. Mohr. 1907. Pp. viii + 588.

NOTES AND NEWS

THE following summary of a paper on 'Fact, Idea and Emotion,' read by Dr. Shadworth Hodgson before the Aristotelian Society, is from the *Athenæum*: "Plato's distinction between what anything is and how it comes about is a more searching instrument of knowledge than any of the three pairs of common-sense distinctions—substance and attribute, agent and action, cause and effect; all of which assume that we are in possession of an idea of *being* previous to any experience whatever. All consciousness is a revelation in the sense that it reveals itself and everything else.

This revelation is experience, and this is what we have to question. Experiencing is a process which, while itself proceeding into the future, objectifies its contents as forming a train of memories receding into the past. *Being* is known to us in no other way; the meaning of the term for us is *objectivity*. Actual experience is a presentation. This means that the time-duration of the content of consciousness as a knowing, and the time-duration of the process of that consciousness as an existent, are one and the same length of time, as, *e. g.*, in hearing a single note of music, or in living through an hour, a day, a year and so on. In representations this identity ceases; the content of an idea may be of any length of time—a moment, a millennium, infinitude; while its process of being presented or experienced as an idea is excessively brief. Its existence as an idea is governed by entirely different laws from those which govern its truth as a piece of knowing. The existence of any state of consciousness depends upon real conditions which are not-consciousness. The only real conditions of consciousness positively known to us are material objects, that is, such as are known to us, presentatively, as at once objects *and* conditions of tactual and muscular sensations. The most significant fact about our experience is its inevitableness. We can not help experiencing. There are certain facts which are fixed, inevitable and common to all experience. Being is one of these, the objective aspect of consciousness itself. Without the general notion of being there could be no notion of truth as distinguished from error. Without it, the most coherent system of thought would be undistinguishable from an illusion. Truth is a subjective term, meaning conformity of our thought to inevitably known fact. Logical identity, which is, as it were, the pivot upon which thinking turns, arises from an ideal arrest of the process of consciousness, whereby we compare a content to which we attend with itself prior to the moment of attending to it. Emotions are those specific feelings which give life its moral as distinguished from its purely intellectual value. They belong solely to the representational process. They are, as it were, its sensations. We can define them only by reference to the ideas in which they are coelements. Their quality *per se* is as undefinable and as uncausable as is the quality of sensations *per se*. They are therefore the source and the issue of all moral judgments, the judgments of conscience. Yet these judgments are not without a criterion of truth drawn from within their own phenomena, namely, the harmony or the discord which any volitional act of choice introduces into the life of the consciously choosing agent."

A CORRESPONDENT writing to *Nature* from Leal, Russia, gives some interesting facts concerning the life and work of Dr. Jakob Hurt, the 'keeper' of Esthonian folk-lore, who died December 31, 1906. Dr. Hurt was born at Wõru-maai, Põlwa parish, in 1839. In 1859 he studied theology in the University of Tartu (now Jurjew), and was for some years lecturer in the gymnasium of that town, after which he became pastor of the parish church of Otepää. In 1880 he was called to the Church of St. John, in St. Petersburg, to minister to the Esthonian congregation in their native tongue. In 1901 he gave up his pastorage and devoted all his time

to the study of the native literature. To quote in part: "In his early years he became keenly interested in this subject, and listened to old folks' chants and legends, which he recorded and published under the title of 'Vana Kannel'—the Old Harp. These songs awakened a strong feeling among the people, and a collection began in 1888 which is now represented by one hundred and sixty volumes of manuscript. Only two volumes have appeared, and a third is in print as 'Setukeste Laulud,' or the songs of Setukesed. The whole national collection of Esthonian folk-lore now includes sixty thousand records of superstition, fifty-two thousand proverbs, forty-five thousand folk-songs, forty thousand enigmas and ten thousand folk-tales. . . . The number of Esthonians is about one million. There are many settlements of Esthonians in European Russia, Caucasia, Siberia, and in the United States, Canada and other parts of the world. . . . It will be a great loss to the world if the valuable material collected by Dr. Hurt is not preserved for future publication, and every effort should be made to secure this result. . . . The sacrifice of the collection would be a misfortune to science as well as to the Esthonian nation."

THE faculty of the Harvard Divinity School purposes to issue, beginning with January, 1908, a quarterly magazine with the title the *Harvard Theological Review*. The magazine is endowed through a bequest of the late Miss Mildred Everett, made according to the suggestion of her father, Professor C. C. Everett. The editors are to be Professors G. F. Moore, W. W. Fenn and J. H. Ropes.

It is stated that Professor Alexander T. Ormond will lecture on philosophical and educational subjects before the Johns Hopkins University, the University of Virginia, the University of Tennessee, Grant University, of Chattanooga, Vanderbilt University, the University of Georgia, Tulane University, the University of North Carolina and the University of South Carolina.

THE publication of volume five of the text of Plato in the Oxford Classical Texts brings to completion an editorial task of the first magnitude, which Professor J. Burnet, who has supervised the entire work, is the first man since Stallbaum to perform. The final volume contains 'Minos,' 'Leges,' 'Epinomis,' 'Epistulæ,' 'Definitiones' and 'Spuria.'

WISCONSIN has contributed a fund of sixty thousand dollars for the establishment of a Carl Schurz chair at the University of Wisconsin. Leading professors from the universities of Germany will give regular courses, with an interchange course as the ultimate aim.

DR. HENRY W. STUART, of Lake Forest College, has been appointed assistant professor of philosophy at Stanford University.

DR. W. E. HOCKING, of the University of California, has been appointed assistant professor of philosophy at Yale University.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE ULTIMATE ATTRIBUTES OF REALITY¹

THE problem of substance and attributes is somewhat out of fashion since the dominance of modern idealism. It has become a habit to think of reality simply in terms of experience, and reflective experience at that. It seems to me, however, that with our new epistemological tools we are in a position to take up seriously some of the metaphysical problems. Pragmatism, as a movement, has been disappointing in this respect. This is due to the fact that the pragmatic method has been lost in the subjectivism of its advocates.

Substance has come to have a distinct scientific meaning in modern times. So far as it is profitable to revive the Spinozistic conception of substance, it would now amount to an epistemological postulate that facts are part of one world in such a way that every fact can, under certain conditions, make a difference to other facts. What those conditions are, it is for science to investigate. The differences must also be capable of becoming differences to a reflective consciousness under certain conditions, in order to concern us.

These differences are capable of being systematized into certain attributes or categories or dimensions, according to your predilection for terms. My reflections have led me to believe that there are four such attributes irreducible to terms of each other, *viz.*, stuff, time, space and direction. Future investigation will have to determine how far these are ultimate attributes and whether there are others.

The method which we shall pursue will be that of scientific induction instead of *a priori* deduction. No category must be assumed which is not necessitated by the adjustments within experience. In the nature of things, to fill out a complete scheme of categories would be to furnish a complete science of the universe. This, of course, is out of the question. All we can hope to do is to ascertain the fundamental attitudes necessitated by reality.

The classical discussion of substance and attributes goes back to

¹Read before the Western Philosophical Association in Chicago, March 30, 1907.

Spinoza. Spinoza makes causal difference, as well as conceptual, depend upon the possession of a common attribute on the part of the facts. This, evidently, is a confusion of causal processes with logical classification. But the conception of action of like upon like is still prominent in our conception of causality, and still hampers us in trying to deal with the complexity of reality and its various grades.

The same reality, according to Spinoza, figures in different worlds. Thus substance may figure as both thought and extension. It must also figure in infinite other ways not included in experience. Thus substance must possess not only all the attributes there is evidence of, but infinite others. This is the medieval dogma of the *ens realissimum* of which we still find evidence in the idealist's conception of infinite variety in which his absolute must revel.

It is not necessary to point out that Spinoza is inconsistent with his own thesis, that everything within reality must be conceived with reference to a context, or, as he would put it, must have a common attribute with the rest of reality. He is inconsistent, first, as regards the relation between thought and extension, for extension must be conceived, and so must be capable of making a difference to thought. To be indifferent to thought would be to be without significance. He is still more inconsistent as regards his infinite attributes. These, by hypothesis, make no difference to thought, and yet are assumed. On the contrary, in so far as we make an *a priori* assumption, we must start with a finite number of attributes. Else knowledge becomes impossible. As a matter of fact, there can be only as many attributes as make a difference to judging or reflective experience. The question whether these are altered by being known can have no meaning, since it is only for reflective experience that there are attributes.

It is unnecessary to point out that the attribute of extension of Spinoza can not be made an independent attribute apart from experience. Extension is as much a subjective quality as is color or tone. This has been pointed out sufficiently by both empiricists and rationalists since Spinoza. That leaves us only one attribute, namely, thought or experience, of all Spinoza's attributes; and, on the whole, modern philosophy has attempted to express reality in terms of this. Space and time, since Kant, have been regarded as subjective or phenomenal. Absolute idealism, moreover, has found no difficulty in getting rid of the dualism of the *is* and the *ought* by reducing the latter to terms of the former. These are costly sacrifices in the service of simplicity. Can we reconstruct our universe thus? I believe not.

Modern science, in so far as it has been allowed to pursue its own

task, unhampered by metaphysical suppositions, whether of the materialistic or idealistic sort, has always insisted upon as many attributes or dimensions as the facts seem to require. These seem to be three for natural science: space, time and energy. The conception of energy has gradually supplanted the conception of mass as a universal unit of description. Mass is applicable only within a limited field. It is not applicable, for example, to electricity; while energy in its transformations can be made to cover the whole extent of process.

In spite of the fact that natural science has found it necessary to work with these three attributes, it has failed to define its dimensions in any clear way. The attempt at simplification has always made itself felt. Thus space and time have been regarded as pure quantity. But if space and time are pure quantity, how can they be given definite meaning? We must look for the differentia of these attributes. Not the serial tools, which they have in common, but their specific character, is what we must try to get at.

Not only has the attempt been made to reduce time and space to pure quantity, but the same attempt has been made in regard to mass. Thus Karl Pearson would reduce mass to acceleration. But if mass or energy is pure quantity, how can we get the different units with which quantity must deal? Quantity, obviously, means something different, whether it is concerned with chemical elements or electric potentials or neural reactions. But this only shows the confusion that has been too prevalent in the analysis of scientific concepts.

Moreover, natural science has neglected one attribute which is fundamental for its whole procedure. It has assumed at the outset that the universe has meaning. This is not deducible from the three dimensions with which natural science expressly deals. It does not follow from the mere conception of energy, nor does it follow from the conception of time or of space. We may find, therefore, that there is another dimension, neglected, because presupposed, by natural science.

It must be obvious now what we are about. While this inquiry did not start from the assumptions of science, it must be a matter of more than curious coincidence that the metaphysical needs and the scientific needs seem to correspond. Applying the pragmatic criterion, that we must assume only such realities as can make a real difference to our reflective experience, I have arrived at the conclusion that reality can not be expressed in less than four dimensions. These dimensions I now proceed to define:

The first that I shall deal with is that of being or stuff. The stuff that has been emphasized by modern idealism is meaning stuff,

our reflective purposes. These are of final importance for understanding the world. They enable us to differentiate the processes and spread them out in series. Similarity, difference, causality, reciprocity, etc., as general categories or modes of functioning on the part of the reflective ego, must be regarded as stuff also. This reflective stuff is partly content stuff, partly tendency stuff, which makes the particular content significant. I want to point out, however, that in order to make a difference to reflective experience reality need not necessarily be reflective.

On the contrary, reflective experience will be seen to be dependent upon non-reflective processes. The meaning of the object reflected upon depends largely upon its unnoticed background. There are three ways in which attention may be dependent upon unnoticed facts. Thus, processes not attended to may be the larger associative context, the background of feeling and tendency, of the object. The different meaning of man or evolution to the scientist and to the common man is largely in the 'fringe.' Or the unnoticed may be instrumental to the activity of attention without itself being attended to. For example, the words on the page that we read. We have a very different consciousness when we are attending to the meaning of the words from what we have when we make the words themselves the objects of attention. There may be processes, however, which are entirely irrelevant to the purposive consciousness of the moment, as well as unnoticed by it. Thus the pressure of our clothes, the furniture of the room, the temperature, etc., even though not attended to, make a difference to our consciousness which we can easily see by an alternation of these processes. We have a very different consciousness in reading a book out of doors under the open sky from what we have in reading the same book in our own study, though in either case we may not be attending to the setting. If we want one name for all these various unnoticed mental processes I would suggest subattentive, not subconscious, which at best is misleading.

But not only are there conscious processes beyond the circle of reflective thought and making a difference to it; there are processes which we can not speak of as conscious at all, which still make a difference to our reflective meaning. That I can take up the problems of yesterday or last year to-day, and thus connect again with my own past, seems to be dependent upon a continuity of processes which are not themselves conscious. The unity of the passing thought can account for the continuity of our consciousness only while we are conscious. It can not bridge over the gap between going to sleep and waking up again, or account for the bringing back of experiences which have not been active in the meantime. What these non-con-

scious processes are in their own inwardness, we shall never be able to tell. But one thing is certain, and that is the close relation between what we call physical energy and our mental activities. It is a commonplace that a cup of hot coffee may change our emotional attitude toward the world. But I suppose we would not on that account be guilty of speaking of the coffee as emotional stuff. We have gotten over the notion that one process in order to make a difference to another must be of the same kind. Chemical energy is not the same as electrical, though transformable into it. So different are the conceptual tools which we need in each case that electrical energy is sometimes spoken of as immaterial. This, I take it, only signifies that the conception of mass is inapplicable. The difficulty of finding a common denominator between psychic processes and physiological seems still greater, yet they are clearly interdependent. All we can hope to do in science, and science must here be our last word, is to show definitely the conditions under which the transformations take place. The *how* of the process may forever escape us.

As regards, then, the stuff character of reality, we have found it convenient to look at it as of three grades. These grades can be seen in a cross section, as it were, of every reflective moment, the reflective consciousness showing its dependence upon marginal or unnoticed consciousness, and this again upon processes to which no consciousness can be ascribed, and which, for want of a better term, we speak of as physical.

Stuff has the advantage that it can be observed directly. It is an object of immediate perception and judgment. The other attributes of which we shall speak, *viz.*, space, time and direction, can only be observed or make a difference to our judgment through the difference they make to the stuff structure of the world, including our own purposes.

I shall speak of these attributes as non-being attributes, not because they are less real, but because they are not statable as stuff. In the language of modern philosophy the stuff attribute has appropriated the term being. These non-being attributes can be defined or differentiated from each other by the difference which they make to the active purposes of the self.

I have dealt with the attributes of time and space at some length elsewhere, and so shall make only a brief statement in regard to my position here.² It has been the custom, since Kant, to deal with these

² For the fuller discussion of time and space, see especially the author's monograph 'Time and Reality,' *Psychological Review*, Monograph Series, No. 26; and his articles on 'Space and Reality,' in this JOURNAL, Vol. III., pp. 533 and 589.

attributes as series and therefore to insist upon their ideal character. I have insisted, on the other hand, that the serial character is relative, and that the real differentia must be found in characters of reality which are not themselves serial, but furnish the rationale of the serial construction. If you speak of time and space, for example, as pure quantity, there remains the problem of stating the relation of time and space to the general concept of quantity, on the one hand, and to show their differentia with reference to each other, on the other hand; that is, the whole problem of definition remains. In what, in other words, lies the difference in our purposive attitude in measuring space and time?

To speak first of time. What difference does time make to the realization of our purposes? Time necessitates new judgments, whether because of transformation and novelty in the subject or in the object. If we are compelled to make new judgments, whether the cause of new judgments is in the real object or in the real subject (in either case it must be in the latter), then reality is not expressible in static categories.

It matters not, for this purpose, how you ultimately conceive the stuff of the world. You may conceive the process as the rearrangement of permanent bits. Even then you must have something besides the bits and their position to account for the process of the perceptual world. I do not see, myself, how the bits can be indifferent to the rearrangement they must suffer, except as they are recognized as merely our conceptual models. But whether you conceive the stuff of reality in the last analysis as atoms or monads or simple qualities or as purposive systems of meanings, the question remains: When you have thus conceived reality, why should it slip away? Why does it not remain chained in the present, as Parmenides would say? Why should there be rearrangement, whether a running up or a running down process? As the world has no beginning, neither process can be absolute, for then the world must have run its course countless ages ago. The theory that the world tends to an equilibrium or an equal distribution of heat, as implied in Spencer's formula and the second law of thermodynamics, presupposes a finite creation of the world. If you say, again, that the present rearrangement is the result of previous rearrangements, and so on *ad infinitum*, why should there be rearrangement at all? Why should not our positional values remain fixed? Why should something creep into our equations, whether subjectively or objectively, so as to make them false? If you insist that reality remains fixed, there at least remains the appearance of rearrangement in the subject, and that is part of reality and must be met.

If you say that energy is the cause of rearrangement, then you

must at least furnish an intelligible idea of energy. All that we can mean by energy, if we consult scientific advance so far, is such a degree of uniformity as makes prediction possible. But this is the very opposite characteristic from that required for rearrangement. In our own willing, energy would then mean the constancy involved in the realization of our purposes or meanings. That the purpose itself shall have new meaning as the result of the realization can not be stated in terms of energy.

Change, again, is a composite concept and must be analyzed. To say that rearrangement in the object or new judgments from the point of view of the subject are due to change, is at best clumsy tautology and not scientific definition. It simply amounts to saying that change occurs because of change. Neither is the concept of chance serviceable, for chance is merely a subjective attitude, an attitude of at least partial ignorance of the structure of things.

Given, on the other hand, time, as a real character of the world, you can account for the transformation of values or the instability of positions or the falsifying of our judgments, which is what it all amounts to in the end. You can also furnish the rationale for our serial construction to meet such a character of the world. But you can not derive the time character from series. The construction of time infinities is thus a secondary affair, and can neither explain nor invalidate the real time character. We should not say that things move in time. This is putting the cart before the horse. Our serial construction is made necessary, on the other hand, because of the transformation of our facts and values.

And now a word about space. If time makes the difference of transformation, space conditions translation. If time makes an intrinsic difference to our processes, space makes an extrinsic difference. The character of space, in other words, is such that it does not interfere with movement. If space offered resistance, geometry, which is based on free mobility, would be impossible. It matters not for our purposes whether space be actually empty or not. It is convenient, at least for scientific purposes, to posit space as a limit of exhaustion and as the absence of resistance, *i. e.*, to assume a space zero. Only thus can we state Newton's first law of motion. Moreover, if we can approximate to such a limit, it must be as objectively real as though we had actually attained it.

Space makes the difference of distance, as well as that of free mobility. As distance, it conditions the equations of the astronomer and the realization of human ethical purposes. If I wish to communicate with a friend across the sea, it makes a decided difference as regards the kind of communication and the sort of relations that are possible between us, that he is some thousands of miles away.

Things can not move in serial space. Motion in an ideal system is meaningless. Serial space, on the contrary, is an ideal construction to symbolize the relations of things, whether physical masses or geometrical figures or self-conscious individuals, in zero space. If space were merely an ideal system, distance and free mobility would both be figurative without any reality for the figure. If we admit a real zero space, we can easily account for phenomenal or serial space, but not *vice versa*.

I grant cheerfully that all our quantitative measurements are relative. Our serial constructions, our geometrical and chronological models, are our tools by means of which we strive to meet the actual nature of the world. But I do not see how any mere shifting of point of view, as from the human to the absolute, can rid us of characters of reality which condition all our real purposes, whether as regards transformation or translation.

I anticipate the most difficulty from the fourth attribute of which I am going to speak, *viz.*, ought or direction. I admit that this attribute is an afterthought, but the afterthought need not be the less true. We have tried so far to state the universe in terms of three attributes, those of stuff or energy, time and space. But none of these attributes answer the question: Does the process have meaning, or is there validity in the flux? This is not accounted for by stuff, for the stuff character does not contain its own measure. It is precisely because the process is not what it ought to be, because our finite structures are relative, that the question of validity is raised. The question is not answerable in terms of time, for time merely means transformation. Whether transformation towards chaos or towards unity is not answered by time. It is not statable as space, for while space conditions the realization of meaning, it does not constitute meaning or value. But there remains somehow within us the longing for finality; the merely relative fails to satisfy us.

When we insist that there ought to be truth, beauty and goodness, in spite of the relativity of history and our individual judgments, we have at least implied a limit, a direction of history which is not relative. Else all our judgments would be equally meaningless and there could be no degrees of truth, as in the dark all cows are gray.

The absolute idealist insists that in the absolute experience we have such a standard. This absolute experience is even now shared by us. It is this that gives rise to our consciousness of fragmentariness, which accounts for our finite sense of failure, and of which we are even now conscious as the final truth, the purpose eternally fulfilled. But the irony of history gives the lie to any such assumption. The absolute itself is subject to the transmutation of time.

It is the expression of the finite now. Each stage of the process must create its own absolute, find its own satisfaction. The absolute, therefore, is merely an ideal, though convenient, limit. Ontologically, it is relative. It, too, presupposes direction for such validity as it has.

That the idea of direction is valuable as a regulative idea or limit, can not be doubted. But can we also attribute ontological reality to the same? Or is it merely a hypothetical limit, the index of our ideal strivings? It seems to me, if it is required to give meaning to our relative and fragmentary purposes, that it must be at least as real as those purposes themselves. Else all validity becomes impossible. To guarantee the meaning of the process or to furnish the basis for science, the direction must be selective, that is, must condition the survival of structures. Only thus can it satisfy that demand for finality which the finite process fails to fulfill. It is the spirit of truth which is with us always to the end of the eons.

Taking reality, then, at its face value as a stream of processes, it seems to me that it takes at least four dimensions or independent variables to define it: stuff or energy, which furnishes us with our various types of uniformity or expectancy, whether psychological or physical; time, which looked at objectively accounts for rearrangement or passing, looked at subjectively accounts for the instability of our judgments and values; space, which furnishes the possibility of free translation and distance; and direction, which furnishes the limit, epistemological and ontological, for the measure of the validity of our purposes.

JOHN E. BOODIN.

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DISCUSSION

CONTROVERSY ABOUT TRUTH

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS:

The pragmatistic conception of truth is so important that no amount of printer's ink spent upon it ought to be considered wasted. My exposition of it in No. 6 of this year's JOURNAL was sent back to me with copious critical annotations on its margins by Professor John E. Russell. This led to an exchange of letters between us, in which one issue, at least, got sharpened; and as that issue is probably the most prevalent stumbling-block, I ask you, in the interest of clarifying the question, to print the correspondence at it was written. I subjoin our letters.

Sincerely yours,

WILLIAM JAMES.

I

DEAR RUSSELL: Your notes bring out the exact point of misunderstanding, and the exact difficulty with which pragmatism has to cope in making converts.

You say: "*Events in the way of verification do not make an idea true, they only prove that it is true or was true*"—there is the whole difference between us in a nutshell.

The statement seems to mean that truth is a quality of the idea *numerically distinct* from the events which are its proof; but don't you then think that the said quality ought to be somehow definable as it is *in* and *per se*? I hoped for the definition as I read your comments; but in the end I found no new definition, only the old ones of 'agreement with reality' and of 'thinking the reality as it is.'

Now what does agreement mean? Does it mean anything different from (or prior to) the copyings and leadings by which pragmatism explicates the word? These are perfectly well-defined relations of the idea to the reality or to the reality's associates and surroundings.

And what does 'thinking the reality as it is' mean unless it be either copying it, or leading straight up to it, or thinking it in its right surroundings—which last notion means terminating at places to which it, the reality, also leads?

You speak of Leverrier's idea of Neptune being true before it had led him to verify it. Doubtless! but pray *define* its truth *apart* from those leadings and guidings. The word truth *means* just such leadings and guidings. Had his idea led him to point his telescope to a vacant part of the sky, it would have been untrue—is untruth, then, also a resident and previous quality in ideas? Leading to that point, Leverrier's idea certainly was true—I can conceive no other kind of truth—and, of course, quite as true when only verifiable as it was after the verification. Even so the star was Neptune both before and after its baptism, for in the star universe that star is all that Neptune ever can mean.

In the case of Neptune you don't separate the name from the fact found, and make it a cause thereof; you don't say the star was found at that point because it was Neptune; but in the case of the idea you say it led to that point because it was true. But just as Neptune means nothing but the star which at a certain moment is at that point, so true means nothing but the idea which, instead of leading you elsewhere, leads you thither. Otherwise it's like raising a dispute about whether blood is red because it looks so, or looks so because it's red. *You* ought to insist on the latter formula; *I* call them equally correct. You may say either that the leading *makes*

the idea true or that it *proves* it true, for you are only talking of the same thing in different words: The leading both makes you call the idea true, and proves that you have called it so justly.

Take another illustration. Does bread nourish us because it is food? Or is it food because it nourishes? Or, finally, are being food and nourishing only two ways of naming the same physiological events? And if this last view be correct here, why isn't it just as correct in the case of truth?

The concrete facts denoted by the word truth are ideas that guide us towards certain termini. Other connotations of the word than these same guidings it is for you to show. If you can't, then we may say either that the ideas are true because they guide, or that they guide because they are true:—To be true and to guide are precisely equipollent terms, of which you may make either you like the more primordial in significance.

Otherwise (and this is the point which I emphasize, and on which I insist) you must point out some substantive connotation in the word truth *over and above* such guiding processes. If you can do this, I surrender; but I don't see how you can do it.

It seems to me that there is no other connotation, any more than there is in the case of Neptune. Neptune means the star that gets *there*, and true means the idea that 'gets there.' Agreement, correspondence, thinking the object as it is, all resolve themselves into guidings, into 'getting there' somehow. You argue as if, in spite of its getting there, an idea might still be false, unless the intrinsic epistemological virtue of being true were superadded. I wish you'd explain how. To me it couldn't be false under those circumstances.

Revert to food. In this case we do have some additional connotations—a certain chemical structure, say—that explain the physiological events in advance. (We know nothing of such connotations as yet, but we suppose they may some day be known.) If the word food should connote primarily such chemical structure, and only secondarily digestions, absorptions, etc., then you might contend that bread nourishes because it is food, and isn't food because it nourishes. But you would still be on purely verbal ground; and even then you would have to define positively these new-fangled connotations.

Meanwhile please observe that the word true has absolutely no such further connotations; it has no more of them than Neptune has. It denotes certain ideas, and it connotes their 'getting there.'

Here I must leave the matter. As a pragmatist, I can defy you to find any other practical meaning to the word truth than that it guides and gets us there. If, *failing to do that*, you nevertheless

call our account an inadequate account of what you mean by truth, why then, again as a pragmatist, I can wash my hands of the whole controversy. It is trivial. It has no meaning.

Yours, etc.,

WILLIAM JAMES.

II

DEAR JAMES: I think the issue between the intellectualist and the pragmatist narrows itself down to the question of the validity and value of two distinctions. The first is the distinction between the idea's being true and the *proof* that the idea is true. The second distinction is that between a true idea and its instrumental function in leading, guiding behavior to desirable issues in experience.

The intellectualist insists that these distinctions are valid and important to a right conception of knowledge. The pragmatist denies this; he contends that the terms 'true,' 'truth,' 'leading,' 'guiding,' 'getting there,' etc., are different names for the same thing; that the term truth applied to an idea has the same function that the name Neptune, for instance, has when applied to a particular planetary body in the heavens. The pragmatist, after having made 'agreeing with reality,' 'being as it is thought,' etc., mean leading, guiding, coming into practical relations with, getting there, etc., challenges the intellectualist to point out any other significant connection which his terms true, truth, etc., can have. The pragmatist says to the intellectualist, "I pray you to define the truth of an idea *apart* from its leadings and guidings. I defy you to supply other meanings to the word truth than that of guiding and getting us there. Does 'agreement' mean anything different from that copying and leading by which pragmatism explicates this word?"

Now this puts the intellectualist in a hard situation. If he answers, "I mean by a true idea, an idea that agrees with, that copies or corresponds to reality," the pragmatist replies, "But what *is* it to agree with, to copy, etc., reality, if it be not just to lead, to guide, to get there?" Now what can the intellectualist say in reply? Suppose he undertakes to define his meaning of truth in different terms, these terms would suffer the same fate; the pragmatist would explicate them in his terms, of leading, guiding, getting there, etc., and then ask the naked intellectualist to put on different garments.

I can see no other way by which the intellectualist can escape this dilemma than *simply to abide by the terms by which he has defined a true idea*, and insist that it is the pragmatist who has forced upon these terms a meaning they can not take without involving one in intellectual confusion. The intellectualist should, therefore, maintain that the terms in which he explicates the meaning of a true idea give a perfectly defined relation of the idea to

reality. What more definite relation can legitimately be demanded? How can the intellectualist in fairness be asked to define in other terms what he means by agreement with, by copying, by thinking reality as it is? May he not with more propriety ask the pragmatist by what right he makes these terms mean leading, guiding, getting there, etc.?

This leads me to the real issue between the intellectualist and the pragmatist, and first to that distinction between an idea's being true and the proof that it is or was true. Let us take the case of Leverrier and the discovery of the planet Neptune. We have the following things:

1. Certain perturbations in the motions of the planet Uranus which could not be explained by the influence of the known bodies of the solar system.

2. We have Leverrier's idea of a planetary body of a certain mass and position in the heavens.

3. We have the agreement between the calculated perturbations which this hypothetical body should produce in the motions of Uranus, and the actual perturbations observed.

4. We have the discovery of this planet, afterwards named Neptune, by a German astronomer who, following the suggestion of Leverrier, pointed his telescope to that exact spot in the heavens where this planet was.

Now the intellectualist contends that Leverrier's hypothetical conception was true the instant it existed in his mind, and that the trueness of his idea consisted in its agreement with a fact, a piece of reality, an object at that time existing, *viz.*, that planet occupying a particular place in the physical universe. It was the existence of Neptune then and there which made it possible for him to have a true idea at that time. Had he thought differently about this planet, this same body would have made his thought *untrue*. His idea was true for *no other reason*, and true in *no other meaning* of the terms, than that it agreed with its object. Furthermore, the contention of the intellectualist is, that had Leverrier gone no farther in his undertaking, had no telescope ever discovered that planet, his idea would have been as true as it was after the discovery which completed the verification of his hypothesis. His idea did not get its quality of truth by the process of verification—this only produced the certainty in his and in other minds that this idea was true. It is one thing for an idea to be true—it is quite a different thing to *prove* that this idea is true. It is one thing to hit a mark; to *know* that you have hit the mark is a different thing. A bell may ring to let you know that you have made a bull's-eye; the ringing of the bell is the sign, the criterion, of the correctness of your aim, but it hardly

constitutes the trueness of your aim, or your making the bull's-eye. Leverrier's idea hit its mark; what was subsequently done made that fact known. Truth and verification are therefore different things, and to make the truth or the verity of an idea consist in its verification is to introduce mental confusion, and to make unintelligible such a procedure as Leverrier's in the discovery of Neptune. It is true to say that a true idea is one that can be verified, and that only true ideas can be verified, but, then, these ideas are not true *because* they are verified; they are verifiable because they are already true.

This brings the intellectualist to the second distinction upon which he insists, *viz.*, the distinction between truth and its valuation in terms of desirable experience. To say that truth should have good practical consequences, that those ideas are true which work well in practice, that every true idea leads into satisfying experiences of some sort, is to say what no intellectualist need deny. But to say that an idea is true *because* it has this practically good issue, or because it works well, is to say quite a different thing, and something which no intellectualist can accept. "There are," so contends the intellectualist, "conditions on which our human action or the course of experience depends, and to which our actions, our experiences, must conform if they are to have successful and satisfying issues. Only as a particular experience is in agreement with conditions of experience *überhaupt* can it lead to beneficial or desirable experiences. Ideas, therefore, can work well, can lead successfully, only if they first agree with reality, with the objective and determining conditions of our experience." This is just the fact that the pragmatist overlooks when he identifies the truth of an idea with its practically good leadings and consequences. He insists that truth shall be practical, but he fails to answer the question, *How* can an idea, or a course of experience, have a practically good leading or result?

To take your illustration of bread as food: you ask, "Does bread nourish because it is 'food,' or is it food because it nourishes? Or are being food and nourishing only two ways of meaning the same physiological events?" The intellectualist answers, "Bread nourishes us because it contains those chemical elements which are nutritive. A particular substance is not bread because it nourishes—it nourishes because it is bread. Being food and nourishing are two ways of meaning the same physiological events; but being *bread* and nourishing are not two ways of meaning the same physiological events."

The intellectualist need not deny that a true idea has an instrumental function in relation to our various needs; that a true idea is a tool to be used in the service of the will or our practical nature;

but he contends that the efficiency of the instrument, the serviceableness of the tool, depends upon the construction of the instrument, upon the quality of the tool. That a knife cuts well, proves, indeed, that it is a good knife; but that which enables the knife to cut well is the quality of the steel and the fashion of the instrument—in other words, the knife cuts well because it was rightly made. Its cutting well merely proves that the knife *was rightly made*. The proof of the pudding is in the eating; but it will hardly do to say, therefore the good eating is the pudding, or is that in the pudding which gives us that satisfying experience of eating this pudding.

Yours, etc.,

JOHN E. RUSSELL.

III

DEAR RUSSELL: Your letter is so ultraclear and brings the question down to where the wool is so short, that I can't help dashing off one more word, though I know I can't convert you.

First, I note with extreme pleasure your explicit confession that 'truth' in the intellectualist sense can not be further defined. It means 'agreement,' and agreement means 'truth.' That is one point clearly gained.

My second remark is simply this: If 'true' be not an abstract name for the property of verifiability in an idea, then an idea might conceivably be true though absolutely unverifiable. There might be no empirical mediation between it and its object, no leading either to the object, or towards it, or into its associates, and yet it might still be true as 'agreeing' with the object.

But then you are met by Royce's old argument: How do you know it *means* to be true of *that* object? It might 'agree' perfectly in the sense of copying, yet not be true, unless it *meant* to copy, *und zwar* that particular original. An egg isn't true of another egg, because it is not supposed to aim at the other egg at all, or to intend it. Neither is my toothache true of your toothache. Royce makes the absolute do the aiming and intending. I make the chain of empirical intermediaries do it. *What does it in your philosophy?*

Yours, etc.,

WILLIAM JAMES.

IV

DEAR JAMES: According to the meaning of a true idea I have been maintaining, it does follow not only that an idea is true prior to its verification, but also that an idea may remain unverified in our human experience. I would not, however, say that an idea can be true and be absolutely unverifiable; for there may be such a being as Royce's absolute, and if so, no true idea can remain unverified.

In the experience of the Roycean absolute, truth and verification do not fall apart as they do in our human experience. The Roycean question with which you confront me, I must confess, has never given me a pause or seemed a serious one at all. "How do you know that your idea means to be true of its object?" I answer, "When I think, I know what I am thinking about, just as I know what mark I am aiming at when I am engaged in target-shooting. My thinking as such is selective of its object, and knows its own intent, *viz.*, to think that object as that object is. My thought picks out this particular piece of the real world, and means to agree with it, just as I pick out my target and intend to hit it. For instance, I am now thinking of you, among your books, in your study at Cambridge; I mean to think of you and your immediate surroundings, your present doings, as you and they are now at this hour,—ten o'clock in the morning. In so doing, I know what object I mean to agree with in my present thinkings.

Now the Roycean absolute may exist, and if it does, he of course knows whether or not my present thought of you is now true; but the knowing of that being is no more necessary to constitute the truth of my idea or to explain the fact that I aim at you in my idea, than is the presence of an onlooker when I am shooting at a mark essential to my aiming at and hitting or missing that mark. Nor does it seem to me that your chain of intermediaries is in any manner essential to the meaning, the intent, or the truth of my present thought of you, which is sufficient unto itself both to select its object and to determine its truth or untruth.

Yours, etc.,

JOHN E. RUSSELL.

V

DEAR RUSSELL: We seem now to have laid bare our exact difference. According to me, 'meaning' a certain object and 'agreeing' with it are abstract notions of both of which definite concrete accounts can be given.

According to you, they shine by their own inner light and no further account can be given. They may even 'obtain' (in cases where human verification is impossible) and make no empirical difference to us. To me, using the pragmatic method of testing concepts, this would mean that the word truth might on certain occasions have no meaning whatever. I still must hold to its having always a meaning, and continue to contend for that meaning being unfoldable and representable in experiential terms.

Yours, etc.,

WILLIAM JAMES.

REVIEWS AND ABSTRACTS OF LITERATURE

Darwinism and the Problems of Life. A Study of Familiar Animal Life.

CONRAD GUENTHER. Translated from the third German edition by JOSEPH McCABE. London: A. Owen & Co. 1906. Pp. xii + 424.

This volume that had reached its third edition in the original by 1905 is one that is certain to have a high degree of usefulness. It is planned by the author to present the 'range, foundation and value' of evolutionary theories, and in its appeal to the reading public it presupposes no special knowledge of science, beyond the observations of nature and the ideas that form part of the content of every intelligent and reflective mind. It appears about the same time as two other works that also deal with the fundamentals of evolutionary science, and with its scope as well, namely, the two-volume translation of the general lectures by August Weismann, and the first part of the 'Vorlesungen über Descendenztheorien' by Lotsy. The latter is to be a thorough presentation of the whole subject with special reference to botanical material, and appeals to the specialists in general biology solely; while Weismann's book, rendered available to a wider group by the excellent English translation, is addressed to university circles primarily, and is a complete statement of this author's most important contributions considered in their relation to the whole field of evolution.

Guenther is himself a Weismannian, in the essentials of his doctrine, but his work is far from approaching a parallel of Weismann's book. For not only in the lucidity of its presentation and discussion, but in its arrangement of the materials also, it is adapted above all others as a book that may be taken up by those who possess very little idea of science, and whose ignorance leads them to hold very erroneous ideas of the present state and value of evolutionary doctrine. It is, as it were, a beautifully written 'gospel to the unscientific,' who doubt, because they are not familiar with the present state of biological knowledge, that scientific generalizations may be of service as practical guides in thought and conduct.

Without formal division, the book falls into two parts. Nine of the twelve chapters deal serially with the several phyla or major divisions of animal organisms in inverse order from the mammals down to the unicellular creatures, while the remainder is devoted to a general discussion of the main principles of the doctrine and to their extension into the so-called 'higher' realms of thought. But this latter part still retains the lucidity and clearness that characterize the earlier portion, where the manner of conveying definite ideas to the reader is all the more remarkable in its success, as there are no pictorial illustrations in the book.

The first section does not call for detailed review or description. Throughout it all, the author uses the special group under discussion to illustrate some one or some few general principles. For example, in the course of the introductory chapter, where a most vivid word-picture of

the complexity of animal relations is presented, an opportunity is found for the statement of the elements of the orthodox doctrine of natural selection, emphasis being put upon the interconnection of every organism with all other elements of its environment, be these inorganic or organic, like the individual itself or of unlike species. A most interesting view is given of human interrelations with all the creatures that with man make up a 'biocenosis,' or vital community. Again, in the second chapter, where the mammals are specifically treated, not only are the colors of animals considered as adaptive characteristics of their wearers, but the whole subject of mental evolution is outlined. The author's own statement here (p. 79) may be cited, in order to give some idea of his views upon this subject as well as of his method of presentation. ▲ "We now know that the theory of evolution need not stop short at man; that even his mind is no obstacle to our admitting his development from animal ancestors. The mind of man does not differ from that of other animals in kind but only in degree, and there is nothing to prevent us from supposing that it has been raised from the animal level by natural selection to its present altitude. Just as Copernicus smote the conceited belief out of humanity that their kingdom, the earth, was the center of the world, so Darwin has put an end to their assumption that they occupy an exceptional position on our planet. The earth is a stage of a part of the eternal, ever-changing world-mass; humanity is a phase of a part of the ever-advancing world of organic life."

Pursuing the same method, the author incidentally—one is tempted to say, insinuatingly—introduces the reader to great and wide subjects through a discussion of a concrete group of facts. Guenther takes up with the birds the subject of sexual selection, regarding which he is, of course, orthodox in the Darwinian sense; with reptiles, the nature of the paleontological evidence, and persistent types, and also regeneration as an adaptive characteristic, though here he disregards too completely, I think, the divergence in views brought out in the discussion between Weismann and Morgan; with fishes, the biogenetic law, namely, that individual development is a brief review of racial history; with insects, the Lamarckian principle of 'inheritance of acquired characters,' where he takes the extreme position of the thoroughgoing selectionist; crustacea and mollusca are used for the discussion of the chemistry of protoplasm and of metabolism; with worms and cœlenterates he discusses parasitism; and finally, in connection with the protozoa is given a very satisfactory statement of the fundamental cell theory, of the continuity of the germ-plasm as established by Weismann, of immortality as an original character of primitive organisms, and of the whole question as to origin of life and spontaneous generation.

But the reader will turn with greater interest to the later chapters that deal in a general way with the intrinsic nature and scope of the principles of evolution, for the elements of the subject with which the author has dealt earlier in an incidental way are, after all, biological and zoological truisms. The principal topic is, of course, the entire adequacy of natural

selection as an explanation of evolutionary method, and this writer holds firmly to the conviction that it is. Sexual selection is regarded as a complement to natural selection, as by Darwin, and not as a subordinate form of the latter. Likewise, isolation is recognized as a 'factor' in the differentiation of species, in a sense operating independently of natural selection; it—*isolation*—may be only "a preparatory principle . . . which *makes possible* the formation of new species. This formation may be brought about by natural selection *after* the isolation" (p. 331). But Guenther believes that isolation alone may bring about this result, without the aid of natural selection, 'if there were some force in the organisms that caused variations to advance in some definite direction in the offspring' (p. 331). And such a 'force' (*absit nomen*) is found in germinal selection as brought forward by Weismann, according to which selection operating upon and among the several parts of an organism *produces* adaptive modifications or a correlated condition of adaptation, by an intra-selective process. Orthogenesis, however, is regarded as a form of inheritance of acquired characters, and with the Lamarckian principle is thrown out bodily.

The point that merits much criticism, in the opinion of the reviewer, is the author's attitude toward the work of de Vries and others, on mutation or saltation as the method of evolution; for it is here assumed that mutation and selection are mutually exclusive processes, whereas many believe, as the evidence accumulates, that these processes are really supplementary. It is strange that an upholder of the germ-plasm theory should fail to see that the essential feature is the fixity or heritability of new or aberrant characters, and that a heritable variation or fluctuation of the Darwinian order to have a specific value should involve some chromosomal change, precisely as in the case of a mutation or sport, and that the latter differs from fluctuation only in its wider deviation from the parental type. Nor does the author seem to be aware that a mutation is not necessarily swamped by intercrossing, by 'amphimixis,' for in many of the recent experiments the new character takes precedence over its antecedent. It is strange, too, that absolutely no mention is made of the great body of results in the field of statistical study of selection and heredity, for even the works of Mendel and his followers receive no mention. In view of the vast importance of these experimental results, this is a serious omission.

With the mechanistic interpretation, as opposed to the vitalistic, nearly all will agree. While it is true that neo-vitalistic views of writers like Driesch have met with some acceptance, these are so attenuated and metaphysical that they suffer in contrast with the unified and self-consistent mechanical interpretation of the phenomena of life. The pragma-scientist (*verbum novum*) will also willingly accept the conclusion that evolutionary processes are not teleological, in the sense that an end attained controls the attainment of that end, and with this author will reject entirely 'final causes' as contrasted with 'efficient causes' for an evolutionary history.

It is difficult to follow Guenther farther, however, where he draws a sharp line between the material and the psychic, when he states that physical science in the wider sense and psychology are independent and need a new science to reconcile and unify them. It will be well to quote the last paragraph of the eleventh chapter (p. 389): "... It is consciousness that encloses in itself all existence, the material and the spiritual world, since both provinces can only be conceived as processes or states of consciousness. In consciousness we have a unity and a truly 'monistic' standpoint. But consciousness, the all-perceiving subject, can never become the object of an empirical science. When we wish to study it, we have to leave aside the scientific method and turn to philosophy. This is the last and highest science. It is the foundation on which every theory that aims at comprehending reality must rest. It is the undying merit of Immanuel Kant to have shown us the way to it." And yet some may be inclined to agree with the reviewer that consciousness itself can indeed be brought within the scope of scientific method and of evolutionary doctrine.

But above all else the analysis of the subjects taken up in the final chapter—'Nature History and Ethics'—demands earnest consideration. After showing that a descriptive account in biological terms may be given of the evolution of human history, social organizations and of ethical standards, the author immediately abandons all hope of unifying the worlds of 'fact' and of 'values.' He says (p. 425): "We have now reached the fundamental objection to all scientific ethics. Science regards cosmic processes merely as changes, and pays no attention to values. It abandons its methods entirely and contradicts itself when it begins to recognize values. Hence it can not have an ethics, because this has no meaning unless the moral laws that it sets up, and especially the life of man and the improvement of it, are regarded as having worth. Thus for science—to repeat our conclusion—there is no such thing as an aim, an end, or a value in the world."

Yes, in the sense that science can not ascertain the *final* causes and values of the universe—if it has any—because these do not exist in experience. What have we, as concrete individuals, living in a world of reality, to do with 'ultimates' and 'final values'? Can they be real for us? Do they mean anything at all for us? It would, of course, be a mistake to suppose that science has anything to say about that which does not exist in experience of one kind or another. But is it not equally erroneous to regard science as merely a record of events and their connections? Such a conception seems outworn by this time, when men do indeed derive practical guidance and values from their classified and unified experience—from scientific generalizations. These principles reflect us back again, in James's pregnant phrase, into the world of further experience, and they possess a worth and finality commensurate with the body of fact that they summarize, as so much 'conceptual shorthand.' Our author fails, then, to extend the scope of evolutionary method so as to include all phenomena, and many will approve his conservatism. It re-

mains for the future to show whether the pragmatic method, that of science, can be extended to the confines of human speculation, or must fail in the fields of metaphysics and philosophy.

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The Integrative Action of the Nervous System. Comprising the Silliman Memorial Lectures delivered at Yale University, 1904. CHAS. S. SHERRINGTON. New York: Chas. Scribner's Sons. 1906. Pp. xvi + 411.

The aim of this book, as its title indicates, is to set forth in detail the manner in which the nervous system serves to bring together in united action the various parts of the animal organism. There are other agencies also which bring about integration of the organism, as, for example, the mechanical union of parts by connective tissue, the union through chemical action in digestion, or through transference of fluid, as in the circulation of the blood. The integration which is the function of the nervous system, however, is unique in that 'it works through living lines of stationary cells along which it dispatches waves of physicochemical disturbance, and these act as releasing forces in distant organs where they finally impinge' (p. 3). An important characteristic of this integration, moreover, is that it is an integration of *activities*. By means of the nervous system the organism is enabled to act as a unit toward ends which the action of every part subserves.

This functional unity of the entire organism is attained through the activity of the nervous system as a coordinative mechanism. This coordination, expressed in its simplest terms, is the production of an activity which is appropriate to a given stimulus. The unit of such coordination is the reflex act, and the corresponding nervous unit is the reflex arc. The first problem which the author attacks, then, is the determination of the characteristics of simple reflex action.

The significant characteristics of reflex action are brought into relief by a comparison of conduction in the reflex arc with conduction in the nerve trunk. It is in virtue of these characteristics that the reflex arc is fitted to be a coordinative mechanism.

The differences may be enumerated as follows: In reflex arcs as compared with nerve trunks there is "(1) slower speed as measured by the latent period between application of stimulus and appearance of end effect, this difference being greater for weak stimuli than strong; (2) . . . marked 'after discharge'; (3) less close correspondence between rhythm of stimulus and rhythm of end effect" (each reflex has its own characteristic rhythm which it maintains under any adequate stimulus); "(4) less close correspondence between the grading of intensity of the stimulus and the grading of intensity of the end effect; (5) considerable resistance to passage of a single nerve impulse, but a resistance easily forced by a succession of impulses (temporal summation); (6) irreversibility of direction instead of reversibility as in nerve trunks; (7) fatigability in contrast with the comparative unfatigability of nerve trunks; (8) much

greater variability of the threshold value of stimulus than in nerve trunks; (9) refractory period, 'bahnung,' inhibition and shock, in degrees unknown for nerve trunks; (10) much greater dependence on blood circulation, oxygen . . .; (11) much greater susceptibility to various drugs—*anesthetics*" (p. 14).

These characteristics of reflex conduction are investigated in great detail and variety of conditions in order to determine what part of the mechanism of the reflex arc is their immediate seat. It is evident from the fact that the white matter of the nervous system consists in nerve trunks that the seat of the characteristics peculiar to reflex arcs must be found in the gray matter, and since reflex arcs always consist in at least three neurones, it is at once suggested that the synapses may be the mechanism in question. Much strong evidence is adduced to confirm this suggestion, and the author agrees with W. McDougall in attaching to the synapse primary importance in the physiology of the nervous system.

The method of the organization of reflexes into simultaneous and successive combinations so as to bring about complex actions extended both spatially and serially, is determined by comprehensive and detailed experiments. The important structure in the combination of reflexes is the 'common path,' especially the 'final common path.' In the common path stimuli from diverse parts of the organism, if allied, cooperate in bringing about the reaction, and if antagonistic they compete for the use of the 'effector,' with the result that one is effective and the other is inoperative. The common path, then, is the means of coordinating the various reflexes, and it is at its synapse that the phenomena of summation, 'bahnung,' interference, inhibition, etc., take place.

The author then traces the process by which the cerebrum acquires dominance over the rest of the nervous system. In the course of development the leading segment of a plurisegmental animal becomes highly differentiated and becomes possessed of receptors of a high degree of sensitivity. These receptors, the eye, ear and olfactory organ, become sensitive to stimuli from distant objects, and are therefore called 'distance receptors.' These receptors enormously increase the range of the animal's adaptation to its environment. Since their reactions require the activity of the whole organism, the other, more partial reflexes become mere appendages. The brain as the 'ganglion' of the distance receptors becomes in the higher animals, then, the dominant part of the nervous system, and in man, 'reason,' based on the power of associative recall, becomes the supreme guide to conduct.

In the last lecture¹ the author takes up a problem which has direct psychological bearing, *viz.*, the problem of 'sensual fusion.' Nervous integration has been seen to take place through the fusion of nervous impulses in the same 'final common path.' The question is whether the sensory elements which are related in the sense percept are fused primarily for the percept, or whether the sensations are first elaborated and

¹ This lecture appeared originally in the *British Journal of Psychology*, Vol. I., Pt. I.

then fused in the percept secondarily. "To what extent is the visual singleness (in the case of binocular fusion) due to a direct confluence of the sensory paths?"

The question was investigated by the determination of flicker thresholds in binocular fusion of coincident and alternating stimuli, in comparison with the fusion of like stimuli in a single eye. It was found that the light phases in one eye (so far as sensual effect goes) do not interfere nor combine with coincident dark phases of the other, or, to put it in another way, stimulations of alternate right and left arrangement do not combine as series of additive stimuli as would be the case if there were confluence of the sensory fibers before the elaboration of the sensation.

A change in the frequency of one component altered the common threshold to a point between the extremes of the separate thresholds. This process may be taken to be analogous to that by which the brightness resulting from the synchronous stimulation of the two eyes by lights of different degrees of brightness is not the sum of both, but is near the arithmetical mean between them. Both processes are referable to perceptual rather than sensory fusion. The phenomena of the predominance of contours in binocular and uniocular fusion point to the same conclusion.

The anatomical fact that the fibers from the same side of each retina (afferent fibers from 'corresponding points') are projected on the same occipital cortex, which seems to present a difficulty to this view, is explained upon consideration of the other fact that stimulations of corresponding points of the two retinae require conjugate movement of the two eyes to bring the point on the foveæ. It is therefore natural that fibers from corresponding points should meet in the same 'final common path.' This explanation is supported by the fact that stimulation of a point in the visual cortex of the occipital region does cause conjugate movement of the two eyes in the opposite direction. The fusion of sensations in a perception, then, is seen to be parallel to, if not incidental to, the fusion of afferent arcs in the 'final common path' to bring about the motor reaction.

It is evident that the whole trend of the book, though it is primarily physiological, is a strong argument for some sort of 'motor theory' of consciousness. In the first place, as the culmination in the psychological discussion of the last chapter indicates, physiology has immediate significance for psychology, and *vice versa*. In fact, the author himself says, at the opening of the last lecture, that the brain must be considered primarily as the organ of mentality, and therefore can not be fully investigated from the purely physiological point of view; and in closing the lecture he says: "It is around the cerebrum [which he has called the organ of mentality], its physiological attributes, that the main interest of biology must ultimately turn."

It follows, then, from the treatment of the total reflex as the fundamental unit instead of the afferent or the efferent part of the arc, and the treatment of the simultaneous and successive integrations of the

nervous system as centered about the *relation between the afferent and efferent impulse* at the 'final common path,' that there is strong presumption that conscious development is similarly centered about the whole receptive-motor process, and not about one abstract element of it. This position receives strong confirmation from the experiment on binocular fusion in perception.

The book is accompanied by an exhaustive bibliography, and the author supports each step in his argument by frequent reference to his own extensive and minute experiments as well as to the results found by other investigators. Numerous reproductions of myograph curves, etc., illustrate the text.

The original lectures which are reproduced in this volume were delivered at Yale University as the Silliman Memorial Lectures for 1904.

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Some Important Situations and their Attitudes. A. H. LLOYD. *Psychological Review*, January, 1907. Pp. 37-53.

'The situation' in general is the fact of conflict, specific situations involving specific concrete conflicts. Conflict may be stated in various ways, as, the opposition of an existing structure to its environment, the struggle of the personal or variable in man against the habitual, the war of second nature against first nature. The resolving of the conflict takes place through four principal moments. First, there is the *moral situation*, in which existing human habits or laws are confronted by some emergency to which they are not adequate. This induces the *ethical attitude*, which is, in effect, respect for abstract law. "Lawfulness . . . rather than the specific law or structure, is the concern of the ethical attitude." Clinging to the human law, man is set over against nature and regards nature with blind fear. The second moment is the *artistic situation*, which induces the *esthetic attitude*. In the esthetic attitude man no longer feels himself opposed to nature, but in truce with nature. He becomes rather an observer, and the conflict would seem to be now between two different elements in nature, the man being more withdrawn from active participation. His emotion is now one of awe instead of fear. The third moment is the *practical situation* inducing the cognitional or *reflective attitude*. In this attitude man, instead of blindly fearing nature, turns upon her a speculative eye. What before he opposed he now impersonally examines. The reflective attitude fulfills itself in, fourth, the *natural situation*. Here we find nature overwhelming the human structural element which opposed her. "The reflective attitude is always an invitation to nature to realize herself." In this realization of nature the old human habits and laws are broken down and reorganized into a new structure. The attitude corresponding to this final solution of conflict is called the *spiritual*, volitional or religious. In it the personal and the natural are reconciled, and the human being recognizes nature in himself.

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JOURNALS AND NEW BOOKS

RIVISTA FILOSOFICA. November–December, 1906. *Sulla bara dell' Amico* (pp. 565–567): G. CELORIA. – The address delivered at the funeral of Carlo Cantoni by the President of the Royal Lombard Institute of Sciences and Director of the Astronomical Observatory of Brera. *C. Cantoni e la teoria della conoscenza* (pp. 568–592): B. VARISCO. – A sympathetic but critical statement of Cantoni's views. Philosophical progress depends upon the way in which questions are formulated. Objects of thought presuppose an absolute reality. Space and time are constructions subsequent to intelligence, but they are representations that presume the subject. The existence of absolute reality can not be proved, but it is spontaneously and inevitably taken for granted. *Cantoni e Vico* (pp. 593–606): A. FAGGI. – An account of Cantoni's criticisms of Vico in an early work, and a defense of Vico. Vico held that we know what we produce or construct. His views were profound, but vague. Cantoni preferred opinions more simple and definite. *La morale di C. Cantoni* (pp. 607–620): G. VIDARI. – Cantoni was a devoted follower of Kant. The purpose of morality is to maintain the closest possible union between men, and to guarantee religion by deriving it from morality. Cantoni sought to replace Kant's rigidity and formalism by a principle of disinterested impartiality. *Carlo Cantoni e l'educazione nazionale* (pp. 621–632): A. PIAZZI. – An account of Cantoni's influence on university reform. *Filosofia e Scienza* (pp. 633–660): G. VILLA. – Science and philosophy have different functions. Science is analysis, positive research, concrete knowledge. Philosophy is synthesis, discussion of problems, hypothetical knowledge. Philosophy is the effort to gain a total, synthetic construction, which is never final. *S. Bernardo e gli ultimi canti del Paradiso* (pp. 661–697): G. ZUCCANTE. – Continued from previous number. S. Bernard expresses the poetic veneration of the Madonna, and the ideal of mystic contemplation of the vision of God, that are characteristic of the later cantos of the 'Paradiso.' *Rassegna Bibliografica. Nuove Riviste. Sommari delle Riviste Straniere. Libri Ricevuti. Indice dell' Annata.*

Dürr, F. *Grundzüge einer realistischen Weltanschauung*. Leipzig: Thomas. 1907. Pp. v + 90. 2 M.

Eisler, Rud. *Einführung in die Erkenntnistheorie*. Darstellung und Kritik der erkenntnistheoretischen Richtung. Leipzig: Barth. 1907. Pp. xii + 292. 5.60 M.

Forrest, J. Dorsey. *The Development of Western Civilization*. A study in ethical, economic and political evolution. Chicago: The University of Chicago Press. 1907. Pp. ix + 406. \$2.

Külpe, O. *Immanuel Kant*. Darstellung und Würdigung. Leipzig: B. G. Teubner. 1907. Pp. 152.

Marchesini, Giovanni. *La vita e il pensiero di Roberto Ardigò*. Milan: Ulrico Hoepli. 1907. Pp. xii + 388. 5.50 l.

Sollier, Paul. *Essai critique et theorique sur l'association en psychologie*. Paris: F. Alcan. 1907. Pp. vii + 188. 2 fr. 50.

NOTES AND NEWS

THE reviewer in *Nature* of Montgomery's 'The Analysis of Racial Descent in Animals' makes the following interesting comments on the general subject of organic evolution: "It would be a most fascinating task to trace the evolution of modern methods of dealing with the problems of life. Differentiation has taken place so extraordinarily quickly. The time is long past when one man can attempt to grapple with the whole problem. Not only so, but the time seems to be past when one man can even be interested in the whole problem. Evolutionists may be broadly classified into those to whom the problem of evolution is the problem of the origin of species and those to whom it is the problem of adaptation. The keynote of de Vries's 'Mutationstheorie' is the solution of the problem of species; we even go so far as to say that this is the achievement of de Vries's work. The logical conclusion, the complete working out of the theory of natural selection, is reached in Dr. Archdall Reid's 'Principles of Heredity.' The interest of the two authors is entirely different. De Vries's interest is in the origin of species, Dr. Reid's in natural selection. Darwin's interest was in both; if we look no further than the title of his chief work we can see this—'On the Origin of Species by Means of Natural Selection.' The fact that these two interests have segregated, and the way in which they have segregated, are both very suggestive, and the direction in which they point is the same. The fact of segregation suggests that the association of the two ideas was unnatural, and that they were not capable of union. The way in which they have segregated confirms this suspicion. For those who devote their attention to the question of species reject natural selection, while those who elaborate the theory of natural selection find no support in the phenomenon of specific difference. All possibility of a reconciliation between the divorced ideas is put an end to by Meyrick, who probably knows more about specific difference than any one else. In his handbook of British Lepidoptera he says that, in seeking for the most suitable characters by which species may be distinguished, those which can in any way be regarded as useful to the species must be discarded without more ado. It is not surprising that Darwin's work should have borne fruit which segregated in this way. The case is thoroughly Mendelian. Darwin's work was a cross between a biological theory of evolution and a social and industrial theory of competition. The hybrid, more vigorous than either parent, took the world by storm. We are now witnessing its posterity separating out more or less simply into the two forms which were united in the beginning. Just as every plant in the F_1 generation contains yellow and green peas, and just as it is not until the next that there can be found plants bearing only yellows or only greens, so Darwin's interest was in the 'Origin of Species by Natural Selection,' while now we find de Vries, who is absorbed entirely with the former, and Reid entirely with the latter. The experimental method has its limitations no less than its fascination. It is not merely a paradox to say that in biology those things with which we can

experiment most are those which to the organism matter least. The reason is that we are not the first to start experimenting. Nature has been there before. For example, the range of continuous variation in an organism may either be the direct result of the constitution of the living substance or it may have been determined by the most stringent selection acting since life dawned. If, therefore, we institute experiments on variation—for example, the determination of the effect of heat on the range of variation—we may either be studying one of the simple properties of protoplasm or discovering the limits within which natural selection allows the particular organism dealt with to vary under the conditions of heat, *e. g.*, to which we subject it. The really fundamental processes do not lend themselves to experiment. That is how they have become fundamental. Every one who wishes to train himself to study them should read Professor Montgomery's book."

THE *New York Medical Journal* for May 11 contains a pertinent editorial on 'Our Neglect of Psychiatry,' in which it is pointed out how serious a defect in medical education this neglect is: "In many of our medical schools didactic lectures on mental disorders alone are given. The teaching of psychiatry by didactic lectures is a farce, because of the many intricacies of the subject. In others there are from four to six clinical lectures given in the course of the year, and the student gets a brief glimpse into a field of wide extent and one beset with more difficulties than any other branch of internal medicine. In even the best of our universities psychiatry is more inadequately taught than any other subject in the curriculum. Not only is the subject neglected in medical schools, but the peculiar conditions whereby the insane are isolated and herded together in large and mostly distant asylums makes it impossible for the practitioner to fill the gap which a defective education has made. Further, he has practically no postgraduate opportunities." A more intelligent understanding of mental disease should go far toward preventing a large amount of human degradation and misery. The difficulties in the way of adequate clinical teaching in this country are not easy to overcome, "but these difficulties might be reduced almost to a parity with those that attend clinical teaching in most cases of acute bodily disease. Such instruction must be given almost exclusively in hospital wards, and can hardly be given at all in the lecture rooms and amphitheaters of the schools. It seems highly desirable, therefore, that a large hospital for the insane should be readily accessible from any school which is to teach psychiatry satisfactorily." As illustrating the need of better methods, the writer cites the homicide of Mrs. Lamb, the mother of Mary and Charles Lamb, and adds: "Not many years ago a great corporation became involved, and thousands of stockholders, large and small, lost their fortunes, by reason of an undetected mental disorder in one of the responsible heads of the company. Widespread poverty, distress, a score of suicides and many petty misdemeanors resulted from this crash, one of many due to a similar disease. Of the nearly 3,000 persons admitted into the Bellevue psychopathic pavilion in New York last year, one fourth

had committed some petty misdemeanor, a felony, or a gross act in violation of the law, because of mental disease."

IN 1894 the pupils and admirers of Professor Haeckel, of Jena, became interested in the collection of a fund to pay for the erection of a bust on the occasion of his sixtieth birthday. So considerable a sum has been contributed that a scientific foundation is now thought of. The city council of Jena has provided the land and it is announced that a philogenetic museum will be erected. Professor Haeckel will present to the museum his library and his scientific collections. Contributions are received through *das Rentamt der Universität Jena, Jenergasse 8*.

SWAN SONNENSCHNIGER announce that they have in preparation 'The History of Philosophy,' based on the work of Dr. J. E. Erdmann, fifth German edition, revised by Dr. W. B. Erdmann, and edited by W. S. Hough; also 'Lectures in Humanism,' by Professor J. S. MacKenzie, and 'Mental Pathology and its relation to Normal Psychology,' by Professor Storrer, translated by Professor T. Loveday.

CHARLES H. HINTON, examiner in the Patent Office and known for his publications in mathematics and logic, died suddenly in Washington, on April 30. Mr. Hinton was born in London; graduated from Oxford University, and was sixty-three years old at the time of his death.

DR. FRANCIS GALTON has been appointed to deliver the Herbert Spencer lecture for 1907, at Oxford, and proposes to lecture this term on 'Probability the Foundation of Eugenics.'

DR. F. L. WELLS, lecturer in psychology in Columbia University, has been elected to the position of pathological psychologist in the McLean Hospital, at Waverley, Mass.

MR. C. H. HAWES, of Cambridge University, has been appointed lecturer in anthropology at the University of Wisconsin.

MR. A. B. SUTHERLAND has been appointed assistant in philosophy at the University of Wisconsin.

MR. GREGORY D. WALCOTT, Ph.D. (Columbia), of Blackburn College, has been elected professor of philosophy in Hamline University.

DR. N. ACH, docent for psychology at Marburg, has been called to the chair of philosophy at Marburg.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE CONTROL OF IDEAS BY FACTS. III

IN the preceding paper, under this title, I gave a sketch of the situation within which the distinction of fact and meaning is instituted, and an interpretation of the category of 'fact.' I shall conclude, in this portion, with an account of the categories of meaning and of agreement, or correspondence.

The 'facts,' as we have seen, refer to something absent. This, of course, is the ideal or ideative aspect of the situation. Now this absent, which is intended by the presented or factual, is asserted to be just as real as the presented itself. This assertion, moreover, is not a declaration on the part of an outsider who has the entire reality before him; it is the assertion of the given qua given, since it is given only *as* pointing to, intending, something beyond itself.¹ The reality of the absent can be questioned only by questioning the reality of the presented. This is present, then, *in idea* or *as idea*. As such it is contrasted with the given facts of disordered system. But as realities, the reality of presented fact and of idea stand on exactly the same level.² What we call idea denotes the way in which the *entire* reality, to which the local self-discrepant fact is referred

¹The 'given' is an ambiguous term. It means sometimes the whole situation, *not* as taken reflectively or for knowledge at the time, but just as it is in the total experience of it—what I have elsewhere termed the immediate. (See this JOURNAL, Vol. II., p. 393.) But it also means this total experience as contemporaneously intellectualized or delimited, as setting the terms for thought, the data, the 'facts.' It is, of course, in the latter sense that the term is here consistently used.

²The fallacy of orthodox logical empiricism is right here. It supposes there can be 'givens,' sensations, percepts, etc., prior to and independent of thought or ideas, and that thought or ideas may be had by some kind of compounding or separating of the givens. But it is the very nature of sensation or perception (supposing these terms to have any knowledge-force at all, such as Lockean empiricism ascribed to them) already to be, in and of itself, something which is so internally fractionized or perplexed as to suggest and to require an idea, a meaning.

for its own reality, is present³ (it isn't, once for all, a bit of sublimated psychical stuff); while what we call facts denotes this entire situation presented in its disrupted, fragmentary elements.

While, however, the entire reality as entire can be present, under such circumstances, only in idea, it does not follow, of course, that the idea is real in the same mode as are the presented facts. When we say the idea stands on the same level of reality as the given facts, we refer only to the idea as idea, as existent, not to the details of its content. These *may* be false; at best, they are hypothetical. We have, then, a very pretty situation. The presented facts are brutally, unquestionably, stubbornly, there,⁴ but they present themselves as *not* the whole and genuine reality, but as a distorted and perverse portion of it, requiring absent portions in order to be made sound and whole. On the other hand, this total reality, or environment, is present only as an idea—an intention, suggestion or meaning. In claim, it is *the* real; in performance, it is the doubtful, problematic, hypothetic; just as the 'given' facts are real in execution, but uncertain in value and unstable in pretension. Yet the idea, while it may be contrasted with brute, given fact, can not be set over against the total reality, for it *is* that total in the only way in which, *under the circumstances*, it can be realized. The relationship of given fact and idea stands, then, as follows. Neither is real in the sense that it can be cut off from the other and *then* taken to be the total reality, since this latter is precisely the tension in which one stands out against and yet for the other. Both are real in the sense that they present that reality as a condition of disturbed or disordered values. *Both present one and the same reality: but, as distinguished from one another, present it from different stand-*

³ Hence, to return, in passing, to the statement in terms of the discrimination and reference to one another of physical relations and significance relations (see Vol. IV., p. 200), it is not strictly true that, in the first instance, or from the standpoint of the reflective situation itself, the meaning relation is one relation among or along with others. Rather the *thing meant* is that inclusive whole in which *physical* relations would realize coherently, instead of expressing ambiguously, their *physical* relations to one another: water-quenching-thirst, ice-cooling-water are just integrated situations of physical elements, which mean *it* only by meaning to modify one another so as to abrogate their discrepancies as given. The discrimination of a meaning relation along with and over against the physical relations as another relation of the same elements takes place not in the situation itself, but in that situation in which the logician reflects upon a reflective situation: a new and interesting type of situation, the implications of which can not be followed out here.

⁴ It may turn out, of course, that something taken to be *there* was in truth suggested or intended, and hence this may be transferred to the ideal side. But this affects only the specific contents; something immediately *there*, and hence not idea, there must be in order that something may be meant, or be ideative.

points, or in different functions. The 'given' facts are the reality in its *existent* disorganized state of value. The 'idea' or intended is this same reality in its *projected* rectification. In this practical sense, fact and idea necessarily have a certain agreement or correspondence with one another from the start. They correspond as a disease and its diagnosis, or as the diagnosed disease and its proposed remedy, or as a statement of a problem and the suggested method of its solution, as an obstacle and an end which functions that obstacle. To correspond is to respond to one another—to incite and answer one another.

Here, then, we have two aspects of control. On the one hand, the total situation, postulated as fundamentally real in form, but now present only as intended or suggested (and hence hypothetical in content), controls the determination of the 'given' facts. It sets the limits of what shall be taken as given and what not; of what is a relevant and proper element in the determination of presented fact and what not. The given or fact of the lost traveler is obviously different in constitution from that of a botanist, or lumberman, or hunter, or astronomer, whom we might put into his boots. Apart from reference to the kind of total reality which is demanded as the rectification of the troubled or internally discrepant situation, there is no control over the *τὸ τι ἦν εἶναι* or intellectual content of the facts. If reference to this demanded total reality is dropped out, then the given becomes self-sufficient, an object of esthetic admiration or curious elaboration. Or, when it is forgotten that the function of observation is to define the facts that describe the problem of a situation, we get an indefinite accumulation of detail which intellectually is totally insignificant, save *per accidens*. It is the idea then as purpose, as end in view, which prescribes the selective determination of the constitution of the 'given' facts.⁵ The environment varies, in intellectual definition, as the organism, character or agent varies. If this be taken to mean that the world is the sport of the organism, merely subject to its whims, or only a collection of its own states, this overlooks, first, the fact that the constitution of the agent is itself a correlative determination in the same system of values that is undergoing reorganization through internal dissension; and secondly, the point already mentioned that what we mean by fact is just that which, as problem, controls the correct formation of the idea as intent and method of action. It is not some indifferently existing world totally irrelevant to the development of the true idea of *this* situation. An indiscriminate universe, one

⁵ This, once more, is the truth omitted by the rigid or structural type of empiricism. It is, of course, also the truth emphasized by idealistic logics. (See, for example, Royce, 'The World and the Individual,' Vol. I., Ch. VII.)

without selective determination, one, that is, not arranged for the sake of building up and testing an idea, could never be an object of knowledge; at its worst, it would be total reminiscence on a vast scale, a vast mirage or pointless anecdote; at its best, something better, perhaps, than any knowledge—an esthetic delight and free play.⁶

The other aspect of control is that exercised by the given facts over the formation of the *content* of the end, purpose or intent. The fact of being lost is the fundamental given fact; that which simply can not be got rid of. This may suggest a blind struggle, aimless wandering. But in the degree in which the aim of finding home is used to define the problem set by being lost, there is study, investigation, accurate observation; the content of 'being lost' is more or less reconstructed; certain features drop out as irrelevant and misleading—especially the grossly emotional ones; others are emphasized, new features are brought to light. That 'given' is gradually determined which shall be most likely to suggest the total situation, or rearranged harmonized whole of discrepant details, in the way most likely to be effectual as standpoint and method of action. The end first operates, so far as the situation is rationalized, as a basis of inspection and analysis of the situation in its given or disturbed form. The result of this analysis states the obstacles of which the end must take account, if it is to be realized. Thus the end is intellectualized in its content; for it assumes detail in accordance with the needs of the situation defined as obstacles. From mere end, it becomes a systematic plan of action, a method of procedure in overcoming obstacles by utilizing them. The disturbed values constitute the brute, the obdurate, the stubborn⁷ factors, because they evidence the obstructive factors which must be reckoned with if success—harmonization of elements—is to occur. In this practical sense, they are coercive as regards the idea, and control its formation as to specific content. As the method of action is put into effect, it, so far as successful, changes the obstacles into resources; they lose their obtrusively coercive practical quality, and become cues, sign-boards and real means to the end. In this change

*Once more, the total absolutely completed, unified, harmonious reality, the absolute fact which is also absolute meaning, is a case of esthetic fallacy when treated as the reality which is involved in knowledge. Esthesis may be 'better' than gnosis, but to substitute it for gnosis is to translate, from the esthetic side, a delight into an illusion, and from the cognitive, a possible good intent into a certain self-impotence.

⁷This involuntary stubborn character as reality-exponent is valid when taken in relation to succeeding reactions—as that which must be reckoned with; when interpreted in an intellectualistic, ontological fashion, it always gives rise to the end-term or putty conception of mind.

of practical function, the brute character of the given is transformed into luminous or significant character—it not merely *means* to signify, but it *does* signify. In the same degree, of course (because it is the same process), the idea ceases to be just an intention of the given and becomes an inherent, constituent value of reality. The individual who is really finding his way sees his original givens, or data, assuming new and positive imports as they cease to be evidences of being lost and become evidences of being found; as they cease to be obstacles and become effectual and energizing conditions in a total situation. When the situation which has been represented in its disrupted character by facts as given, and in its total character by the idea or meaning, is realized as an effectively harmonized situation, the original brute datum is transformed through the acquisition of the meaning which it had previously simply pointed to, while the guessed-at meaning is verified by becoming a structural value of the facts. This reciprocal transformation is the signal and seal of their agreement or correspondence. It is possible that one and the same reality should be brute and inconsistent in fact while harmonized and one in idea, precisely because the situation, being an active one, is reality in transition, and, so far as reflective, is in process of *directed* transformation. Moreover, we escape wholly from the intellectualistic dilemma of having to compare an idea with a fact which is present, or having to compare the idea with a fact which is merely absent, because their correspondence is witnessed in the eventual construction of a harmonized scheme of meanings. The objective reality which tests the truth of the idea is not one which externally antecedes or temporally coexists with the idea, but one which succeeds it, being its fulfillment as intent and method: *its* success, in short.

In these last remarks we have, of course, passed on to the subject of agreement. If we exclude acting upon the idea, no conceivable amount or kind of strictly intellectualistic procedure can confirm or refute an idea, or throw any light upon its validity. How does the non-pragmatic view consider that verification takes place? Does it suppose that we first look a long while at the facts and then a long time at the idea until by some magical process the degree and kind of their agreement become visible? Unless there is some such conception as this, what conception is there of agreement save the experimental or practical one? And if it be admitted that verification involves action, how can that action be relevant to the truth of an idea, unless the idea is itself already relevant to action? If by acting in accordance with the experimental definition of facts, *viz.*, as obstacles and conditions, and the experimental definition of the end

or intent, *viz.*, as plan and method of action, a harmonized situation effectually presents itself, we have the adequate and the only conceivable verification of the intellectual factors. If the action indicated be carried out and the disordered or disturbed situation persists, then we have not merely confuted the tentative positions of intelligence, but we have in the very process of acting introduced new data and eliminated some of the old ones, and thus afforded a fresh opportunity for the resurvey of the facts and the revision of the plan of action. By acting faithfully upon an inadequate reflective presentation, we have at least secured the elements for its reinterpretation. This, of course, gives no absolute guarantee that the reflection will at any time be so performed as to prove its validity in fact. But the constant self-rectification of intellectual content and intent through the modification introduced by acting upon them in good faith is the absolute of reflective knowledge, loyalty to which is the religion of intellect.

The intellectual definition or delimitation assigned to the 'given' is thus as tentative and experimental as that ascribed to the idea. In form both are categorical, and in content both are hypothetical. The facts really exist just as facts, and so the meanings exist just as meanings. One is no more superfluous, more subjective, or less necessitated than the other. In and of themselves as existences both are equally realistic and compulsive, but on this basis, as just existences, there is no element of content in either which may be strictly described as intellectual or cognitional. There is only a practical situation in its most brute and unrationalized form. The moment we recognize the element of uncertainty in the contents unreflectively supplied for facts and meanings and set to work to redefine those contents with reference to the requirements of their adequate functioning in the transformation of the situation, reflective knowledge, rationalization, begin. What is uncertain about the facts as given at any moment is whether the right exclusions and selections have been made in determining them. Since that is a question which can be decided finally only by the experimental issue, this ascription of character is itself tentative and experimental. If it works, the characterization and delineation are found to be proper ones; but every introduction of unquestioned, categorical, rigid objectivity into the structure compromises the probability that it will work, save accidentally. The character assigned to the datum must be conceived as hypothetically as possible in order to preserve the elasticity needed for easy and prompt reconsideration and requalification at the bidding of the needs of the developing situation. Since the logical force and function of the facts are not

ultimate and self-determined, but relative to suggesting an intent in the form of an approved method of action, the reflective situation is adequately reflective only in so far as the thought of the purpose to be attained is consistently utilized to recharacterize the fact. Any other procedure virtually insists that all facts and details anywhere happening to exist and happening to present themselves, since all are equally real, must all be given equal status and equal weight; and their outer ramifications and internal complexities be indefinitely followed up. The complete worthlessness of this sheer accumulation of realities, its total irrelevancy, the lack of any way of judging the significance of the accumulations, are good proof of the fallacy of any theory which ascribes objective logical content to fact wholly apart from the needs and possibilities of a practical situation. Supply an end to be reached, a purpose to be fulfilled, and at once there is a basis for supplying internal individuality and external restriction to the facts in question, while so long as the end is tentative the character, inherent and external, assigned to facts must also be provisional.

It has been suggested that the controlled development through reflection of a disordered situation into a harmonized one is compromised and hindered in just the degree in which the facts and meaning are permitted to assert, as fixed and final within the reflective situation, the contents which they bring to it from without. The more stubbornly one maintains the full reality of either his facts or his ideas, just as they stand, the more accidental is the discovery of relevantly significant facts and of valid ideas—the more accidental, the less rational, is the issue of the knowledge situation. Due progress is reasonably probable in just the degree in which the intent, categorical in its existing imperativeness, and the facts, equally categorical in their brute coerciveness, are assigned only a provisional and tentative nature with deliberate reference to the control and reordering of the situation. That this surrender of a rigid and final character for the content of knowledge on the sides both of fact and of meaning in favor of experimental and functioning estimations, is precisely the change which has marked the development of modern from medieval and Greek science, seems undoubted. To learn the lesson one has only to contrast the rigidity of both phenomena and conceptions (Platonic ideas, Aristotelian forms) in Greek thought with the modern experimental selection and determining of facts and experimental employment of ideas. The former have ceased to be ultimate realities of a nondescript sort and have become provisional data; the latter have ceased to be eternal meanings and have become working hypotheses. The fruitful application

of mathematics and the evolution of a technique of experimental inquiry have coincided with this change. That, indeed, realities exist independently of their use as intellectual data, and that values and meanings exist apart from their utilization as hypotheses, are the permanent truths of Greek realism as against the exaggerated subjectivism of modern philosophy; but the conception that this existence is of the intellectualistic type, *i. e.*, is to be defined in the same way as are contents of knowledge, so that perfect being is object of perfect knowledge and imperfect being object of frustrate knowledge, is the fallacy which Greek thought projected into modern. Waiving the question whether this existence of independent realities and meanings signifies anything at all apart from participation and position in systems of well-ordered activity, it is certain that science has advanced in its methods in just the degree in which it has ceased to assume that prior realities and prior meanings retain fixedly and finally, when entering into reflective situations, the characters they had prior to it; in which it is realized that their very presence within the knowledge situation signifies that they have to be redefined and revalued from the standpoint of the needs and intent of just the new situation.

This conception does not, however, commit us to the view that there need be any conscious situation which is totally non-reflective. It may be true that any experience which can properly be termed such involves within itself something which is meant over and against what is given or there. None the less, since every reflective situation is a specific situation (one having its own disturbance and problematic elements and its own demanded fulfillment in the way of a restored harmony), it is true that the contents carried over from one reflective situation into another are at the outset non-reflectional with reference to the new reflective situation, entering primarily as *practically* determining or alogical elements; and this remains true of the outcome of the most comprehensive thought so far as that becomes datum for another intent. Because the stated condition of fact or meaning is a satisfactory solution with respect to the concrete problem of one concrete situation, its functioning as the disturbing and uncertain element in some other concrete situation is not thereby prevented. Hence the requirement of requalification within each new specific intellectual process. In the second place, there are many situations into which the rational factor—the mutual distinction and mutual reference of fact and meaning—enters only incidentally and is slurred, not deliberately accentuated. Many disturbances of value systems are relatively trivial and induce only a slight and superficial redefinition of contents. This passing tension of facts against their meaning may suffice to call up and carry a wide

range of inherently valuable and meaningful facts which are quite irrelevant to the intellectual problem and to the specific purpose now entertained, and which accordingly require no redefinition. Such is the case where the individual is finding his way through any field which is upon the whole familiar, and which, accordingly, requires only an occasional resurvey and revaluation at moments of relative and slight perplexity. We may call these situations, if we will, knowledge situations (for the reflective function characteristic of knowledge is present), but so denominating them does not in the least do away with their sharp difference from those situations in which the critical qualification of facts and definition of meanings constitute the central problem. To call the passing attention which a traveler has occasionally to give to the indications of his proper path in a fairly familiar and beaten highway while his main attention is elsewhere, knowledge, in just the same logical sense in which the deliberate inquiry of a mathematician or a chemist or a logician is knowledge, is as confusing to the real issue involved as would be the denial of *any* reflective factor in the former. If, then, one bears in mind these two considerations—(1) the unique problem and purpose of every reflective situation, and (2) the difference as to range and thoroughness of logical function in different types of reflective situations—one need have no difficulty with the doctrine that the primary difficulty of critical or scientific knowing is that facts and meanings enter such situations with stubborn and alien characteristics imported from situations which, in their contrast with the requirements of reflection in *this* case, may be fairly termed non-reflective; so that the essential problem of intelligence so far forth as intelligence, is precisely the reassignment of content in accordance with the needs and purposes of this situation: it is just this resurvey and revaluation which constitutes rationality.

This affords an opportunity to speak again of the logical problem to which reference and promise of return were made earlier in this paper (Vol. IV., pp. 199–200). Facts may be regarded as existing qualitatively and in certain spatial and temporal relations; when there is knowledge there is another relation added, that of one thing meaning or signifying another. Water exists, for example, as water, in a certain place, in a certain temporal sequence. But it may suggest or signify the quenching of thirst; and this signification relation constitutes knowledge.⁸ This statement may be taken in a way con-

⁸ This view was originally advanced in the discussion of quite another problem than the one here discussed, *viz.*, the problem of consciousness; and it may not be quite just to dis sever it from that context. But as a formula for knowledge it has enough similarity with the one brought out in this paper to suggest further treatment; it is not intended that the results reached here shall apply to the problem of consciousness as such.

gruous with the account developed in this paper. But it may also be taken in another sense, consideration of which will serve to enforce the point regarding the tentative nature of the characterization of the given, as distinct from the intended and absent. Water means quenching thirst; so it is drunk, and death follows. It was not water, but a poison which 'looked like' water. Or it is drunk and is water, but does not quench thirst, for the drinker is in an abnormal condition and drinking water only intensifies the thirst. Or it is drunk and quenches thirst; but it also brings on typhoid fever, being not merely water, but water plus germs. Now all these events demonstrate that error may appertain quite as much to the characterization of existing things, suggesting or suggested, as to the suggestion qua suggestion. There is no ground for giving the 'things' any superior reality. In these cases, indeed, it may fairly be said that the mistake is made because qualitative thing and suggested or meaning relation were *not* discriminated. The 'signifying' force was regarded as a part of the direct quality of the given fact, quite as much as its color, liquidity, etc.; it is only in another situation that it is discriminated as a relation instead of being regarded as an element. It is quite as true to say the fact is called water because it suggests thirst-quenching as to say that it suggests thirst-quenching because it is characterized as water. *The knowledge function becomes prominent or dominant in the degree in which there is a conscious discrimination between the fact relations and the meaning relations.* And this inevitably means that the 'water' ceases to be *surely* water, just as it becomes doubtful or hypothetical whether this thing, whatever it is, really means thirst-quenching. If it really means thirst-quenching, it is water; so far as it may not mean it, it perhaps is not water. It is now just as much a question *what this is* as what it means. Whatever will resolve one question will resolve the other. In just the degree, then, in which the existence or thing gets intellectualized force or function, it ceases to be just reality as such and becomes a fragmentary and dubious reality to be circumscribed and described for the sake of operating as *sign* or clue of a *future* reality to be realized through action. Only as reality is reduced to a sign, and questions of its nature as sign are considered, does reality get intellectual or cognitional status. The bearing of this upon the question of the practical character of the distinctions of fact and idea is obvious. No one, I take it, would deny that action of some sort *does* follow upon judgment; no one would deny that this action *does* somehow serve to test the value of the intellectual operations upon which it follows. But if this subsequent action is *merely* subsequent, if the intellectual categories, operations and distinctions are complete in themselves,

without inherent reference to it, what guarantee is there that they pass into relevant action, and by what miracle does the action manage to test the worth of the idea? But if the intellectual identification and description of the thing are as tentative and instrumental as is the ascription of significance, then the exigencies of the practical situation are already operative in all the categories of the knowledge situation. Action is not a more or less accidental appendage or after-thought, but is undergoing development and control in the entire knowledge function.

Reality in its characterization as fact, in the logical force which it has in the regulation of the formation and testing of ideas, is not, then, something outside of or given to the reflective situation, but is given or determined *in* it. Reality as such is the entire situation, while fact is a specific determination of it. If the reflective situation were purely intellectualistic, then the objective idealist would have logic on his side; but since it is a focusing of a disturbed system of activities and divided values on their way to a unified situation of harmonized values, we have a dynamic realism. Similarly the idea is not a fixed thing, an entity existing in some ontological psychical region, and then happening to get caught in a reflective situation. If it were, either the subjective idealist would be right, or else the determination of truth would by its nature be impossible. But idea is a logical determination, ultimately practical in origin and function. What on one side is a name for operative realism, names on the other an experimental idealism.

In conclusion, I remark that the ease with which the practical character of these fundamental logical categories, fact, meaning and agreement, may be overlooked, or denied is due to the thoroughly organic way in which practical import is already incarnate in them. It can be overlooked because it is so involved in the terms themselves that it is assumed at every turn. The pragmatist is in the position of one who is charged with denying the existence of a certain reality, because in pointing out a certain fundamental feature of that reality which previously had not been stated but assumed, he puts the affair in such a strange light as to appear arbitrarily to change its character. Such a confusion always occurs when the familiar is brought to definition. The difficulties are more psychological,—difficulties of orientation and mental adjustment,—than logical, and in the long run will be done away with by getting used to the different view-point, so as to see things from it, rather than by argument. Meanwhile the argument of this paper is proffered in the hope that it may, with some, facilitate the process of habituation.

JOHN DEWEY.

TRUTH AND ITS VERIFICATION

AFTER all the discussions of pragmatism that have appeared in this JOURNAL and elsewhere during the last three years it would seem that one ought no longer to have any doubt as to what the pragmatist means by truth. I, at any rate, had supposed it pretty well settled that pragmatism identified the truth of an idea with its successful working, with its verification; that it held truth to be quite as much an experienced process as saying the multiplication table or watching a chemical experiment. Recently, however, there have appeared in the writings of some leading pragmatists a quite different point of view, a tendency, namely, to identify the truth of an idea not only with the process of its verification, but also with its *verifiability*.¹ A true idea would thus be either one that has actually been verified or one that could be verified, and the truth of it would consist either in its concretely experienced leading to a satisfactory issue or in the possibility of such a leading.

Now it seems to me of great importance, if we are to keep the issue between pragmatism and intellectualism perfectly clear-cut, to note exactly what position such a view must hold in the present controversy over the nature of truth. And I will say at once that to my mind, at least, the conception of truth as *verifiability* seems by its very nature essentially non-pragmatic. It is inconsistent with nearly all the characteristics which distinguish the ordinarily accepted pragmatic view of truth. For verifiability is not a process, it is not included within any one's experience, but is a general condition or set of conditions which transcends every single finite experience. It is not a felt 'leading,' it is not a 'form of the good,' nor a 'satisfactory working,' nor any other kind of experience or experience-process. It is a totality of relations which are not within any finite experience. It is a present condition of the idea, not something that 'happens' to it. It is not 'made'; it is already there. Verification is one thing; verifiability is quite another. They are *toto cælo* apart. Verifiability is transcendent of experience in exactly the same sense in which the intellectualist makes truth transcendent. The intellectualist, indeed, might not be willing to accept it as a complete account of truth; he might still want to ask, How comes it that the idea can be verified? just what sort of condition is verifiability? Still the identification of truth with verifiability comes immeasurably nearer to the intellectualist's view of truth

¹ I seem to find such a tendency, for example, in certain passages in Professor James's article, 'Pragmatism's Conception of Truth,' in this JOURNAL, Vol. IV., p. 141. See especially pp. 144, 145, 149—*e. g.*, "Truth *ante rem* means only verifiability," etc.

than to the ordinary pragmatic view. In short, it is quite as impossible to identify truth with both verification *and* verifiability as it is to be both a pragmatist and an intellectualist at the same time. The pragmatist can not hold them both; he can not say, truth is altogether within experience and truth transcends experience. He must choose between them.

That being the case, there can be no doubt, after all, as to the fundamental pragmatic view of truth. *Truth for the pragmatist does not mean verifiability*; it means the process of verification. It is wholly within experience. It is to be identified with 'the psychological or biological processes by which it is pursued and attained.'² It is either a 'function of our intellectual activity' or a 'manipulation of our objects which turns out to be useful.'³ Or, in Professor James's clear statement, it is 'eventual verification,' the 'function of a leading that is worth while.' "Truth *happens* to an idea. It *becomes* true, is *made* true by events. Its verity is in fact an event, a process, the process, namely, of its verifying itself, its verification."⁴

These are certainly plain statements, and the pragmatic meaning of truth can not be mistaken. But one feels tempted, incidentally, to ask, If truth be nothing but the process of its verification, or the processes by which it is pursued and attained, what is it that is verified, what is it that is pursued and attained? Are we verifying verification and pursuing pursuit? This, indeed, sounds like logomachy, and I ask the question only to show that the use of such a word as verification by a theory which seeks to reduce everything to psychology results naturally in strange twistings of language. Pragmatism may very properly speak of successful and satisfactory experiences, but it is hard to see how it can consistently use the term *verification* at all. However, I do not press this point, but shall merely remark in passing that to me, at least, it would seem as hard to lift oneself by one's boot-straps as to comprehend how truth can consist in the process of its own verification, or how it (or anything else, for that matter) can *be* 'the processes by which it is pursued and attained.'

Having satisfied ourselves as to the exact meaning which the pragmatist gives to truth, let us turn to the intellectualist. His account of the matter is, as every one knows, that truth means the correspondence of an idea with its object. But, asks the pragmatist, is not *correspondence* about as meaningless as any term can be? Does it mean that the idea *copies* reality? And is it not apparent

² Professor Montague, in this JOURNAL, Vol. IV., p. 100.

³ Mr. Schiller, 'Humanism,' p. 61.

⁴ 'Pragmatism's Conception of Truth,' pp. 144 and 142.

that at best the number of cases in which the idea can be said in any sense to copy its object is extremely small? Or is truth some more mysterious—or mythological—quality in which the idea *participates*—a sort of metaphysical entity to which we must all bow down in worship?—The fact is, the pragmatist is here making his own difficulties for himself. The intellectualist's meaning of truth is so simple, so commonplace, so close at hand, that the pragmatist has quite overlooked it. By the truth of an idea the intellectualist means merely this simple thing, *that the object of which one is thinking is as one thinks it*. Is there anything hard about this, anything meaningless, anything 'metaphysical' or abstract?

But to make the whole matter perfectly clear, let us take a concrete situation and apply to it the rival views of truth; thus we shall see exactly how they compare with each other. There will indeed, be nothing new in this, for concrete test cases have abounded in many of the discussions of this subject. Yet most of these cases have seemed to me a little unfortunate in involving, indirectly, other questions than the one at issue and getting confused through realistic or subjectivistic interpretations. What we want is a case in which the meaning of the object as well as that of the idea shall be clear and shall be the same for all schools. I think the following rather puerile case will satisfy these conditions: John thinks Peter has a toothache; the object of John's thought is Peter's present experience; and, as a fact, Peter *has* a toothache. Now the intellectualist's notion of truth is this: that John's thought is true *because its object is as he thinks it*.

Now let us apply the pragmatic meaning of truth to the same situation—remembering that truth here means 'a form of the good,' 'the useful, efficient, workable,' 'the satisfactory,' 'the process of verification.' The truth of John's idea about Peter's experience, therefore, according to the pragmatist, *consists in* its satisfactoriness to John, in its successful leading, in its verifying itself. If it works, if it harmonizes with John's later experiences of Peter's actions, if it leads in a direction that is worth while, it is true (a statement to which, indeed, all might assent), and its truth *consists in* this working, this harmony, this verification process. John's thought, the pragmatist insists, *becomes* true only when it has worked out successfully, only when his later experience confirms it by being consistent with it—for remember, truth is not verifiability, but the process of verification. "Truth happens to an idea. It *becomes* true, is *made* true by events." At the time when John had the thought about Peter, the thought was *neither true nor false*, for the

⁶ Mr. Schiller's expression, in 'The Ambiguity of Truth,' in *Mind*, April, 1906.

process of verification had not yet begun, nothing had as yet happened to the idea. To be sure, Peter had a toothache, just as John thought, but, all the same, John's thought was not true. It did not become true till several hours afterward,—in fact, we may suppose, not until Peter, having cured his toothache, told John about it. The thought, "Peter has a toothache," thus, as it happens, turns out not to have been true while Peter actually had the toothache, and to have become true only after he had ceased to have a toothache. It became true only by being proved true, and its truth consisted in the process of its proof. One might, perhaps, be tempted to ask what it was that was proved, and to say to the pragmatist, Either this satisfactoriness, this successful leading, is a proof of something outside of John's immediate experience, something by which his idea is to be judged and justified (in which case truth ceases to be mere verification process and becomes at least verifiability); or else it is merely John's subjective feeling of satisfaction and of successful leading and consistency, with no reference to anything else to justify it,—in which case it may indeed be pleasant and 'good,' but it is hard to see why it should be called *true*. For suppose that at the same time with John's thought, Tom thinks Peter has *not* a toothache. Suppose that, being a little stupid and perhaps a little hard of hearing, he misinterprets John's actions and expressions, and that later on he is assured by some one equally misinformed that Peter certainly had no toothache. His thought thus works out, is successful, harmonizes with his later experience, is to him genuinely verified. The whole matter ends here and he drops the question completely, never investigating farther. Were the thoughts of both John and Tom true?

Now it will not do to respond, "No; Tom's thought was not *genuinely* verified. Only that thought was really verified and therefore true which *would have* worked out had both been investigated sufficiently." For what do you mean by '*sufficiently*'? Sufficiently for what? To argue thus would be to presuppose a criterion (apart from the leading of the thought) to which the thought must correspond if it is to be true. If you distinguish between a 'genuine' verification and one that is only subjectively satisfactory, you appeal to some other criterion than the process of verification—in other words, you go over to the intellectualist's point of view. If, on the other hand, you stick to your pragmatic criterion and say that the truth of the thought consists in its *actual* satisfactoriness, then the question becomes pertinent: Were the thoughts of both boys true? Obviously they were, for both worked, both were satisfactory, both were verified. Hence it was true at the same time and in the same sense that Peter had a toothache and that Peter had not a toothache.

Nor is there anything surprising in this, if truth is nothing but a particular kind of satisfactory experience. The principle of contradiction has no meaning and can no longer hold if truth be altogether within one's experience.

The usefulness of an hypothesis is indeed an excellent test of its truth. This is a practical method for the verification of an idea on which pragmatism has done well to insist. But to identify the truth of a thought with the process of its own verification can hardly lead to anything but intellectual confusion.

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ON THE FUNCTION OF VISUAL IMAGES

IN spite of the frequent references to individual differences in the relative development of different sorts of imagery and in the vividness and fidelity of imagery of any one sort, little attention has been paid to discovering the significance of these differences. For example, speculations assuming a positive relation between (1) the relative facility and permanence of impressions through any sense and (2) the relative number, vividness and fidelity of the images corresponding to that sense have been allowed to run riot, though there is not, so far as I am aware, any proof that such a relation exists, and though there certainly is no proof that it is at all close.

Again, it is common not only for writers on pedagogy or on mental diseases, but even for expert psychologists, to talk as if responses of thought and action were based chiefly on and directed chiefly by data present in the form of images,—as if, for instance, the patient could not say *cat* because he had 'lost' the appropriate motor image; as if the singer knew his note to be false by comparing it with an auditory image of the proper pitch; as if the equipment of a student of anatomy were in large measure an inner panorama of bodily organs. Yet no one has demonstrated that the possession of many and vivid and faithful motor images makes any great difference to speech, or that the capacity for such images of the auditory sort has very much more to do with musical achievement than with ability in geometry. Indeed, no one has *demonstrated* that in either case the quality of the image has anything whatever to do with the efficiency of the response.

For one who has never made the experiment it is most instructive to compare the vividness and fidelity of visual imagery with the efficiency of knowledge of form, size, shape and the like, in the case of a hundred or so individuals.

After making such experiments one will appreciate the risk of *a priori* arguments concerning the function of individual differences in imagery and the necessity of empirical discovery of the function. For instance, the result of the following experiment, which any teacher of psychology can verify without difficulty, apparently leaves no reason for belief that what we call knowledge about the visual aspects of things is to any considerable extent dependent upon our visual images of them.

The experiment consisted in testing the knowledge of the size, number, shape and position of certain absent objects possessed by some 200 college students who had rated themselves on a modification of Galton's scale for the vividness and fidelity of their visual imagery, after the study of the descriptive psychology of imagery usual in a general course in psychology.¹ These crude ratings are, of course, subject to a somewhat large variable error, but this is immaterial to the point at issue, as will be later seen.

The tests were as follows:

Think of the Broadway front of Barnard College.

1. How many stories high is it?
2. How many windows are there in the second story?
3. How many panes of glass are there in one of these windows?
4. How many urns stand on the Broadway front of Barnard

College?

5. How many posts stand in front of the Broadway front of Barnard College?

Think of the 116th Street front of the Columbia Library building.

6. How many pillars are there?
7. How many windows in the space behind the pillars?

Think of Mr. T— (whom they had seen as a lecturer to them three quarters of an hour weekly for nine weeks).

8. Does he wear a 'stand up' or a 'turned down' collar?
9. Is his hair parted on the left, in the middle or on the right?
10. How many inches wide are his shoulders?

The amount of visual experience in the case of Barnard College and the Columbia Library varied, of course, greatly, from those who daily walked by the building several times to those who claimed never to have seen it. All such causes of variability are, however, immaterial, since they are random with respect to vividness and fidelity of visual imagery. The effect of sex is also practically random for our purpose. For our purpose, then, we have simply to compare the good with the less good visualizers. If we take as

¹ This study was, to be exact, that represented by Chapter III. of Thorndike's 'Elements of Psychology.'

one group those who on a scale of 1-10 rated themselves 8, 9, or 10, and as the other those who rated themselves 1, 2, 3, 4 or 5, we have roughly the upper and lower thirds by the ratings.

There is no demonstrable difference between the knowledge of the one group and that of the other, nor between the highest and lowest tenths by the imagery rating.

The facts may be summarized in many ways. The median or average error is the best, perhaps, in cases where the errors vary over a wide range. The percentage of cases manifesting more than a given degree of error is a useful variant of the median error. The percentage of cases manifesting *any* error, that is, more than zero error, is practically the only useful measure in cases where the errors vary only over an extremely restricted scale, as in the judgment of 'Hair parted left, middle or right?' (middle being the correct judgment) or 'How many stories in the Broadway front of Barnard College?'

Table I. gives the results of such calculations for the best and worst thirds (62 and 73, respectively, in number) as rated for vividness and fidelity of visual imagery.

TABLE I.		
Test.	Superiority of good Visualizers.	Method of Calculation.
1.	.008	Per cent. of errors over 0 Per cent. of errors over ½ Average error
2.	— .234	Per cent. of errors over 4 Average error Median error
3.	— .311	Per cent. of errors 2 or over Average error
4.	.110	Per cent. of errors over 0 Per cent. of errors 2 or over Average error
5.	.090	Per cent. of errors over 0 Per cent. of errors 3 or over Average error
6.	.170	Per cent. of errors 3 or over Average error
7.	.060	Average error
8.	.090	Per cent. of errors over 0
9.	— .328	Per cent. of errors over 0
10.	— .130	Per cent. of errors 5 or over Average error
Average — .048.		
Median + .034.		

The figure for the superiority of good visualizers equals (error of poor visualizers divided by error of good visualizers) — 100, or (frequency of error in poor visualizers divided by frequency of error in good visualizers) — 100.

Six of these results favor the good visualizers, but in one case only by a hair's breadth. The four in favor of the poor visualizers are so by larger amounts, so that the average of the ten is in their favor (95). Since the average is 95 and the median 103, the most probably true central tendency is 99. The reliability of this 99, as a measure of the ratio which would be obtained from an infinite number of the same sort of tests upon these 140 individuals, is approximately $P.E. = \pm 4.6$. There is only one chance in fourteen, for instance, that such true result will be 109 or over.

This result will seem strange or even preposterous to those who are accustomed to think of the mind's judgments as chiefly interpretations of data stored up in the form of images corresponding feature by feature with the objects and events experienced,—interpretations whose correctness depends chiefly on the data thus stored. The fact is, however, that the mind's judgments are responses to direct experiences or to any situation whatever which stands in their stead or 'means' them,—responses whose correctness depends chiefly on (1) the data experienced, (2) the permanence of the neural alterations (of whatever sort) made thereby, and (3) the degree to which satisfaction and discomfort are associated respectively with truth and error and operate as selective agencies. Moreover, it is also the fact that images corresponding feature by feature with an object or event may be extremely vivid and faithful and yet give rise to very little useful knowledge. A person may give the best of evidence that he has a distinct mental image of a certain person comparable to a photograph and yet be unable to count the buttons on the coat which he sees or estimate the width of the shoulders within ten inches!

Neither of these facts seems in the least strange to one who understands that to have connections we must make them and reward them, and that an image, no matter how exactly it corresponds to an experience in structure, may not correspond at all well dynamically, that is, in respect to the connections made with it.

In order not to prolong what is meant to be a note on an instructive class experiment into a discussion of the function of imagery, I shall omit further comments on the theoretic significance of such experiments and all comment on their practical consequences for education in science, drawing, music and the like. Suffice it to say that they add one more system of evidence of the general fact that the intellect is not a logician working over data turned out by a copying machine.

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REVIEWS AND ABSTRACTS OF LITERATURE

Studies in Humanism. F. C. S. SCHILLER. London: Macmillan & Co. Pp. xvii + 492.

Whatever may turn out to be the ultimate fate of the pragmatist movement, of its fruitfulness and stimulating power there can by this time be little question. It is compelling us all to sit up and take notice; and while one may regard the judgment that it is an undertaking in some ways 'the most stupendous in the history of thought' as a bit over-enthusiastic, it can hardly fail to leave a permanent impress upon the philosophical attitude. It is needless to say that Mr. Schiller's book, if one can avoid the prejudices not unlikely to be aroused by his polemical mannerisms, possesses to the full this power of suggestiveness; indeed, it raises so many questions, and throws so many novel lights, that the writer of a short review is impressed with a sense of helplessness in knowing how to deal with it. It may be said that Mr. Schiller's tone has mellowed a little in this last volume. He can indeed hardly be called sympathetic at any time toward opponents; and he is still on occasion too free with such phrases as 'gratuitously absurd,' 'silly quibbles,' 'sheer prejudice' and the like. Still on the whole the book, though hard hitting, depends upon serious and candid argument; and it endeavors, plainly, to present the issues squarely and without concealment. So that it probably is, up to the present, the most complete and unambiguous utterance of the school, and reveals most fully alike its motives and its tendencies.

What, as I should interpret it, would seem to be the thing which Mr. Schiller is most anxious to maintain, is the genuine importance to the constitution of reality of our human action, and of the thinking which makes it possible and effective. For us, truth and reality in the fullest sense are not fixed foundations, but ends to be achieved (p. 432). Nothing is absolutely settled. Human operations are real experiments, with a reality that really responds; reality is still in the making (p. 218). Back of all our thinking lies the practical and moral postulate that things as they are can be remade and *made perfect*, and that to us as human agents the task belongs (p. 450). To this practical end truth or knowledge is subservient. It is a fact of human life primarily, to be understood by the part it plays in life. Pragmatism is, then, the conscious application to epistemology of a teleological psychology (p. 12). Man is not made to contemplate ideas, but ideas are made for man and by man, to serve the ends of action (p. 44). The attainment of wisdom is not a matter of idle speculation, but of altering reality, within oneself and without (p. 36). By the creative power of belief is meant, therefore, primarily, the fact that belief is a real force in the world through its connection with activity. It is not mere knowing that changes things, for the reason that there is no such thing as *mere* knowing; knowing is always part of a process which sooner or later issues in action (p. 440). 'Practical' means simply that which serves directly or indirectly to control events; and the subordination of theory to practise stands at bottom for

the fact that all experience is essentially *active* (p. 130). So, too, the application to experience is necessary as the test and guarantee of truth. Until we have applied it, we can not be sure that we really understand things. Truth is a claim whose value can not be decided by mere inspection; experience is needed to show whether it is good or not.

It is in the light of this attitude that we may interpret, primarily at least, the objects of Mr. Schiller's aversion. 'Absolute' stands for a pre-existing ideal already attained, and so existing 'immutable and *a priori* in a supercelestial world, and descending magically into a passively recipient soul'—an ideal divorced from life, since this is always a *striving toward* completeness, and therefore unable to help out in any way our actual limitations and growth in knowledge. The 'independence' of reality means 'independence of human purposes,' 'intrinsically unrelated to our life,' 'that which can not be known or related to us.' And 'correspondence,' again, means something which excludes being 'efficacious.'

So far I do not see how Mr. Schiller's thesis can very well be objected to. There is such a thing as growing human truth; and it is all that we at least possess. The 'psychology' of truth is a matter well worth attention: it is important in itself, it must form the basis for any possible account of the world of knowledge, and its implications for a general philosophical attitude are bound to be highly significant. The philosophical deficiencies of an intellectualistic and academic attitude Mr. Schiller does not, in my opinion, exaggerate. But after all, for many of us, the special interest lies in what comes after. To what does it all lead? I can only indicate a few points, without arguing them, where I can not feel so confident of Mr. Schiller's position.

Mr. Schiller himself, to begin with, draws very sharply the distinction at issue. It is affirmed that pragmatism as such does not attempt, and never has attempted, to be a metaphysics, but only an account of human knowing. Of course, many of the criticisms have been on the supposition that it did pretend also to be a metaphysics. It has been among the metaphysicians, rather than the psychologists, that its chief opponents have been found; and as confessedly nothing but psychology, it is likely to lose something of its interest. Nor does it seem to me clear, either, that Mr. Schiller is wholly free from responsibility for the mistaken interpretation. If we allow this distinction between 'truth' and 'reality' at all—a distinction which pragmatism as a metaphysics would deny—it will be well to keep it very clearly before us. But Mr. Schiller is continually blurring the distinction. To be sure, he usually introduces some qualifying phrase, such as 'our conception of reality,' 'our acceptance of reality,' reality 'for us' or 'for our knowledge' (*cf.* pp. 186, 194, 425). But these are easily overlooked; and in any case I venture to think that the average reader will find it hard to avoid the impression that what he is saying about 'reality' is not intended as mere 'psychology,' but is somehow significant for a final statement. In another way, something of the same feeling of uncertainty is lent by Mr. Schiller's expressed attitude toward metaphysics. It is a luxury, which really doesn't amount to very much. It is merely personal; one may amuse himself after this fashion

if he sees fit, or, if he please, may eschew it altogether; and he need not, indeed he ought not, to expect other people to agree with him. I can not make quite clear to myself just what this attitude means. If it is only that Mr. Schiller is more specially interested in working out a psychology of the knowledge process, and does not care to bother with other problems, he has of course the same right as any one to restrict his field; but the fact is of no great philosophical importance. Clearly, however, the judgment is intended to be more objective than this; and as such it appears to me to hint at least at a position of unstable equilibrium. If there actually is reality beyond us that we can know, by what right are we to proclaim that it doesn't make much difference what we think about it? The contrary would seem at least as likely. And if, on the other hand, there is a continual insistence upon the purely personal and supererogatory character of any metaphysics, the natural thing to do would seem to be to take a step farther, to recognize that these constructions of reality are merely human and instrumental, and so to accept either the unknowableness, or the entirely unmeaning character, of a reality beyond. But this is of course itself a metaphysics. And my point is, simply, that without a conscious metaphysics it is impossible to judge pragmatism; it can not stay mere psychology without abating the most of its apparent claims.

Now the feeling I get from Mr. Schiller is, to repeat, this: that in spite of the distinction he draws he has so strong a leaning toward making the psychological explanation all-inclusive, as to lead him into not infrequent ambiguities. There is no space to examine all the passages I have in mind;¹ but I may come back for a moment to the 'making of reality.' If the pragmatist would be content to say that knowledge, directly or indirectly, *alters* reality, so that without it the world would not be the same world, I do not think he would find much opposition.² But his whole mode of expression, at least to the unwary reader, has tended to keep the other side from view. I imagine that of the three main modes of altering reality to which Mr. Schiller appeals, none would be seriously denied, taken by itself. Knowledge alters reality by leading to action. It alters us who possess it, and our views. And it may, as a belief, become a motive which alters the feeling and behavior of other

¹ Compare, *e. g.*, the meaning of the term 'relative' as opposed to 'independent' reality. This may mean either that the reality is not unrelated to our interests, or that it is actually only a functional distinction within our knowledge. This last is what Mr. Schiller's statements seem to me most naturally to point to; but such an interpretation would mean declaring for a metaphysical pragmatism. Compare, *e. g.*, pp. 183, 461, 482.

² In a recent story, where the hero is claiming the omnipotence of thought, it is argued against him that there are some things which can not be *thought* out of existence; a man can not think himself out of a cell. To which it is replied that a man can so apply his brain and ingenuity that he can leave a cell, which is the same thing. Substituting creation for annihilation, this is the answer that Mr. Schiller now gives. But it may be said not unfairly that it is a quite different meaning that the first statement taken strictly would seem to have, and that if the second was really meant all along it would have been better to have said so and thus prevented misunderstanding.

conscious beings apart from action of ours (pp. 438-439). But in all these cases, certainly in the first, there is nothing inconsistent with an object of knowledge which we did not make, but, rather, this is implied. The second case may be regarded as irrelevant. And even in the third, which seems to me the only plausible instance of a real making of reality by sheer belief, it may be pointed out, first, that it only involves, again, a change in an object already existing, and so partly independent of us; and second, that to furnish the most effective motive is not to believe credulously that a person *is* what in point of fact he is not, but, recognizing his present reality, to believe that he has the power of *becoming* otherwise—a situation which admits everything that the ordinary upholder of ‘independence’ would claim. To put it in another way, we may make a distinction between the altering of *reality*, which all would grant, and the making of the *particular* reality to which the knowledge intends to refer, at the time when it so intends. It is instances of this last which the pragmatist finds it hard to give without abandoning the ordinary man’s point of view altogether, and identifying frankly the growth of our knowledge with the world process. And my point is, again, not that Mr. Schiller does not recognize the other side, but that he seems to recognize it grudgingly, that he certainly gives an impression that the aspect which he emphasizes is the only important one, and that sometimes, even, he speaks in a way that appears to be inconsistent with there being any other side. So, for example, I have found no passage in which he does not, apparently, deny the validity of the ‘correspondence’ idea altogether in knowledge. But the denial of the correspondence idea would seem to mean, definitely, that there is no reality beyond, and so to convert the theory to a metaphysical pragmatism. If such reality, unmade by us, exists for our knowledge, there is just as much necessity for the notion of correspondence as in the idealisms and realisms wherein he finds it a fatal flaw. It may be that Mr. Schiller has in mind to speak only of correspondence as a practical test of truth, and in that case he is, I think, right. Correspondence is not a *test* of truth; belief in it is one *result* of the knowledge process,—an object of faith, which involves, however, the satisfaction of a real human interest. But if this is his only meaning, his mode of expression is at any rate misleading.

Perhaps it may be said that the criticism of ambiguity ignores the fact that Mr. Schiller does, before he finishes, definitely turn to metaphysics, and pronounce in some measure upon it. As a matter of fact, the metaphysics seems to me calculated not so much to complete as to reverse the impression which the bulk of the volume tends to make. Still the correction must of course be accepted; and the light which it throws upon pragmatism deserves a good deal more attention than can be given to it here. The treatment is slight, and is to be found notably in the last two essays. I will merely call attention to two points in particular which it has suggested.

And, for one thing, I find evidence here of the same uncertainty of which I have complained in the treatment of knowledge, and which has left me in the end without the definite standpoint which it seems to me

one has to have to make any final estimate of pragmatism. What I mean may perhaps be illustrated by the treatment of naïve realism. What are we really to think about the 'independence' of the external world? The question is central for the metaphysical status of pragmatism. I at least should grant that the belief arose first as a postulate. As such, furthermore, it is open to an abstract doubt; it may conceivably be reversed.* But this is true of any belief; the question is, whether, according to our present best judgment, we really are to believe it as it stands, or whether we are as philosophers to take it merely as a methodological construction, *i. e.*, to deny it, and make pragmatism a metaphysics. At one point Mr. Schiller would seem to grant that it is justified, not only as practically advantageous, but as really sound in the 'correspondence to reality' sense (p. 201). But no sooner has one begun to feel fairly settled on the point than he is straightway unsettled again. In the very ingenious 'dream' argument, in the last essay, the doubt is raised once more, and the independence and reality of the world are called in question in the interests of a higher world of religion. In spite of Mr. Schiller's disclaimer, it seems to me that this issues naturally in a metaphysics which denies 'independence.' If this world is unreal, why may we not have the same reason for holding *any* world unreal? The answer is that we only judge a world unreal in the light of a completer experience. But the more an experience grows in harmony, the less, if I understand Mr. Schiller's argument, will it render 'independence' possible, since it is only because there are things we refuse to stand for, and which we want to change, that we postulate independence in any case. But then a completely harmonious experience would apparently have to be solipsistic, since it would have no motive for the recognition of anything other than its own reality (pp. 470 ff., *cf.* p. 321); while any particular reality up to this point could equally with the present world be condemned as unreal, because of its incompleteness.

There is, however, another statement of his realistic position which appears to me more clear. For on occasion Mr. Schiller turns pretty definitely to a panpsychism, which accounts for the reality which we do not make in terms of other beings and their creations, perhaps even of 'one or more beings' of predominant power and creative ability. I do not quite see the connection of this with the treatment of realism just referred to, but it can, I suppose, be regarded as authoritative; and it may lead to the final remarks I have to make.

And I may call attention to the fact that here Mr. Schiller for the first time allows value to a motive which has sometimes been in dispute in the pragmatist controversy. This is what may be called in a certain sense the theoretical value in knowledge. The most definite statement of the motives which may lead the pragmatist to panpsychism is perhaps this: that such a theory is an attempt to 'make the human and the

* Mr. Schiller seems sometimes to imply that this abstract possibility of reversal is equivalent to the recognition of the purely instrumental character of belief. But a recognition that our conceptions of reality may change need not take all value from our present confidence in a real validity and 'correspondence.'

cosmic more akin, and to bring them closer to us that we may act upon them more successfully' (p. 443, *cf.* preceding statements). It may be noted that there are really two motives here which might well be more sharply distinguished. The last is the practical motive in the narrow sense, in terms solely of some future change which knowledge enables us to make. But this surely would not be pressed. How a panpsychic interpretation of the external world, how, *e. g.*, Mr. Schiller's fancy that 'catalytic action' suggests a situation in which two chemical elements which are unacquainted have to be introduced by a third, and then like each other so well that they leave *C* out in the cold, could possibly give effectiveness to our practical dealings with things, would be hard to imagine. What value of any sort, indeed, it can be supposed to have sufficient to lead a pragmatist to entertain it seriously, one finds difficulty in seeing. And the suspicion naturally suggests itself that Mr. Schiller's previous disparagement of metaphysics may have been due to a sense of the slight practical value really attaching to the particular metaphysics which he individually affects. But in any case, it is worth observing that what is left as the only plausible motive for such a metaphysics—if we leave out the mere desire to understand which is apparently unpragmatic—implies the attitude which elsewhere is depreciated. The desire to feel our 'kinship' with the world, to have any real meaning, must assign a value to the conception of an 'independent' reality, not simply as it can be changed in the future, but in its present existence also; and to the idea of a 'correspondence' between that reality and our knowledge of it. The admission of such a motive might well, it seems to me, alter somewhat the emphasis in the pragmatic argument.

But now there is a further motive which also, and perhaps most fundamentally, comes into question through the entire book. And that is the narrowly intellectual and rational one. The significance of this Mr. Schiller consistently denies in his attack on absolutism. I have no space to consider the merits of the question, and, to speak frankly, I have not a settled opinion about the way it ought finally to be estimated. But at least I can not feel that the underlying interests, in attempting to serve which absolutism gets its hold, are so wholly futile, so 'gratuitously absurd,' as Mr. Schiller would have us believe. It is not the whole philosophical motive; and if it finds no place for the truth which the pragmatists urge, I believe that it is both practically and theoretically unsatisfying. But if there could be found a way of reconciling this truth with that wholeness of things of which philosophy has commonly been in search, it would certainly give an added satisfaction. And Mr. Schiller's final and most definite metaphysical suggestion is well calculated to bring out the difficulty. After allowing the possible existence of other beings back of the world of nature, Mr. Schiller finds a way of giving a final metaphysical meaning to the 'making of reality,' by suggesting that the reality which we are led to regard as not made by us, was nevertheless made after the same fashion that we create reality, but made by these other beings. But then we seem to be led to a primitive reality altogether vague and inchoate, out of which all the definiteness

and unity of the universe have gradually evolved, a primitive matter which is not merely a methodological postulate of epistemology, but a real metaphysical existence.⁴ Now I do not say that a thoroughgoing evolutionism is impossible. I only maintain that there is a certain aspect of irrationality to it which is a severe strain on the ordinary philosophical understanding. And this Mr. Schiller seems to admit. For his answer is simply to tell us that we are not concerned with what things were or how they came to be, with understanding them, in other words; but only with the practical question of what we can make out of them in the future. Now I can readily conceive that I might be brought to a state of mind in which I should be forced to put up with what seemed to me theoretical absurdities for lack of any solution; and then I should doubtless accept as good practical advice the admonition to turn to affairs of conduct. Indeed, in any case I should willingly admit that this last is the finally important matter. But also, constituted as at present I find myself, I am bound to feel that a philosophy which bids me stop trying to make things intelligible, and sink the demand for rationality in the practical concerns of action, is only a second best, and that it leaves me with a genuine impulse unsatisfied. And so long as the pragmatist can see in the demand nothing but 'sheer prejudice,' the war is likely to go merrily on, with but remote chance of either side convincing the other.

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JOURNALS AND NEW BOOKS

ANNALEN DER NATURPHILOSOPHIE. April, 1907, Band VI., Heft I. *Das nächste Problem der Chemie* (pp. 1-15): F. WALD. — The article is taken up, if we except the polemical matter which it contains, with a discussion of the variability of solid phases. The author scores Arrhenius for applying the Dalton laws (definite multiple and equivalent proportions) to crystalline solids, while dismissing without comment, 'because they rarely occur,' solid solutions to which the laws do not apply. He considers the atomistic idea, which is of course founded on the Dalton laws, as merely a special case of a more general law, and accuses it of being the cause of lax methods of thought and a hindrance to the solution of such problems as he presents. He takes up in connection with solid solutions isomorphism, composition of minerals, semi-permeable membranes, water containing crystalline salts, and 'impurities,' in the discussion of the absorption by solids. In processes of purification we are really separating phase forms, until at last we come to what he calls *Eckpunkten*-forms of constant composition; and to these alone do the atomic laws apply. Prevailing theories concern themselves only with these 'edgepoints,' and not with the other phase forms. Since elements

⁴The shifting between these two interpretations seems to me another instance of the wavering attitude toward the final implications of pragmatism of which I spoke at the start. Cf. pp. 432 ff.

are only special forms of phases, the hope is expressed that it may sometime become possible to discover the laws governing all existing phase forms, analogous to, or rather underlying, that of Mendelejeff. *Illusive Reihen* (pp. 16-19): W. M. FRANKL. - Illusive series are such as constitute no causal series, though their parts follow each other. Of these there are seven kinds. *Die allgemeinsten Gesetze des physikalischen Geschehens und ihr Verhältniss zum zweiten Hauptsätze der Warmlehre* (pp. 20-30): A. E. HAAS. - While the energy of any system remains constant, its tension (*Spannung*) diminishes with every change that takes place in it, and with it, the available power (*Ereignisvorrat*). Of this general law the second principle of the theory of heat is a special instance which has been more readily recognized simply because we have for thermal energy a fixed zero. *Persönlichkeit und Unsterblichkeit* (pp. 31-57): W. OSTWALD. - The writer can conceive no higher meaning for the term immortality than the fact of achievements bequeathed to posterity. The course of nature seems everywhere to lie in the direction of the dissipation, not the concentration, of energy, the diminution of the significance of personality. *Der Richtungsbegriff und seine Bedeutung für die Philosophie* (pp. 58-92): R. GOLDSCHIED. - The concept of direction is fundamental to both rest and motion; purpose should be defined as direction reflected upon. The deepest significance of direction lies in the fact that while it is the *Überquantitative* it is measurable, and is the bridge between the qualitative and quantitative. Direction has neither beginning nor end, and ultimate purposes must be ignored for proximate directions. Time is to be defined as a continuous series of ends attained. Whether one speaks of obligation or of necessity is a mere matter of methodology. The true practical concept is that of possible directions, ranged according to their relative probability. *Neue Bucher*: W. O. - E. Cassirer, *Das Erkenntnisproblem in der Philosophie und Wissenschaft der neueren Zeit*. W. Fliess, *Der Ablauf des Lebens*.

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NOTES AND NEWS

THE monument which is to be erected to Lamarck in the Paris Jardin des Plantes is described in *Science*, May 17, as follows: "The proposed monument, designed by M. Fagel, gives a bronze bust of Lamarck, surmounting, after the fashion of recent French sculpture, a large granite pedestal with figures in relief. These portray the philosopher aged and blind, seated at the base of his monument, and close by, reading to him, his devoted daughter—a pathetic picture of Lamarck's last days when in poverty and in disfavor, on account of his evolutionary writings, he was living as a recluse in the ancient house of Buffon, near which, probably on the very spot which he crossed in his daily walk, the monument is to stand. It is only within recent years that the position of Lamarck among the pioneers of evolution has come to be understood. Darwin himself was distinctly unjust in his treatment of him. But from the work of the modern paleontologist on the one hand and the experimentalist on the other, tribute is coming to be paid to Lamarck's wonderful insight, imperfect though the materials of his inductions were, into the processes and factors of organic evolution. The 'American school of evolutionists,' headed by Cope, Osborn, Hyatt, Ryder, Packard, has indeed touched so closely the lines of his philosophy that it has often merited the title of 'Neo-Lamarckian.' And it is to our countryman, Packard, that we are indebted for the only work upon the life and teachings of Lamarck which has hitherto appeared."

IN September, 1906, there was held at Milan a congress of naturalists, at which it was decided to organize the Italian Society for the Advancement of Science. The committee appointed for this purpose has arranged to hold a congress at Parma in September, 1907, on which occasion the society will begin its career. It is to be regretted that none of the subjects ordinarily grouped together as philosophy will be represented.

THE Congrès international de Psychiatrie, de Neurologie, de Psychologie et d'Assistance des aliénés, will take place at Amsterdam, September 2 to 7, 1907. The congress is organized by the Société néerlandaise de Psychiatrie et de Neurologie.

DR. EDWARD CAIRD, the master of Balliol College, Oxford, has been compelled by ill health to resign the mastership, to which he was elected in 1893 in succession to Professor Jowett, having been formerly fellow of Merton College and professor of moral philosophy in the University of Glasgow.

PROFESSOR JOHN ADAMS, who holds the chair of education in the University of London, and Dr. J. M. E. McTaggart, lecturer in moral science, Trinity College, Cambridge, will take part in the work of the summer school of the University of California, which opens on June 24.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

SNAP SHOT OF A HUNT FOR A LOST NAME

FEW opportunities are more suitable for studying at once the introspective machinery and the various states, phases and attitudes of consciousness than the search for a forgotten name. Sensational states, relational phases, impulsive attitudes can be noted and compared; the machinery of association and intellection can be studied; conative action and reaction can be discriminated without interfering with the dominant functioning of the introspective apperception system; the changes and chances of feeling can be caught on the fly because of the slight practical value they have in comparison with the dominant interest of psychologizing. Indeed, here we have a mental situation almost ideally free from most of the drawbacks of the introspective method, and more especially so because there is little temptation to have one's judgment warped by philosophical presupposition and prejudice. The best traditions of empirical psychology are associated with the detached and disinterested interest in mental process apart from any half-acknowledged awareness that the results of one's study are going to have a bearing upon pragmatism and idealism and all the other fascinating forms of philosophical 'positions.' Although the present writer will strive to interpret the following photograph of his search for a missing name, he is quite sure that his profound interest in the accuracy of his introspective observations has prevented him from being influenced either by his philosophical view-point or by his attachment to his own tentative psychological system. And even if his interpretation should be found strained and lacking in verisimilitude, he can assure psychological 'men of good will' that his reflections on his observations were entirely subsequent to the 'development and printing' of the snap shot itself. If his system itself should prove in this and other cases to have methodological and explanatory value, so much the better; but in any event the observed facts have their own intrinsic value for the psychologist who believes that the natural history of our science should not be neglected even in favor of laboratory experiments and theories of cerebral localization!

I

We are twenty minutes from the end of a period in the class that is studying the 'Principles of Education.' An illustration has been chosen by the teacher from Professor Thorndike's 'Principles of Teaching': "Who dragged whom around the walls of what city?" To his surprise the teacher finds that he can not himself remember the name of the hero that did the dragging of Hector around the walls of Troy. Following his habit of making psychological use of current material, he warns the class not to tell him the missing name, and asks for suggestions that will aid him in recalling the name. Some suggestions are offered, but to no avail; so he proceeds with the lesson, remarking that he will tell the class how the name got recalled if he can catch himself in the act. He then points out the futility of judging children's knowledge and effort by means of an estimation of merely mechanical verbal memory, and gives a hint or two as to the physiological condition that brought about such a flagrant instance of memory failure. He is inclined to think that the word will 'saunter into his mind' before the period is over. But it doesn't.

At the close of the hour his assistant comes in and shows interest in the case, asking that the result of the episode be told to her. This remark and the interest shown by the class seem to put the psychologist on his mettle, and he expresses his determination to force that name into memory and to catch it as it comes in. He is aware that the names 'Aristides' and 'Aristotle' have come in unbidden, though both seem to be perfectly at home and to be expecting a friend. He is dimly aware that these unexpected guests are for some reason or other keeping out-o'-doors the expected guest, the hero of the Iliad. He strives to recall other associated heroic names, and Hector, Ajax, Priam, Æneas, even Thetis, come to mind. What is the name of the Grecian generalissimo? he asks himself. The name declines to appear. And what the name of the missing hero's friend? That, too, sends 'regrets.' But after a little, while the psychologist is walking across the campus, and while the self-invited guests, Aristides and Aristotle, are making themselves heard, noble Agamemnon quietly walks in. So far, so good. Now, says the psychologist, if I can get that *friend's* name, I shall be closer to the missing hero. Thus ruminating, he starts for the 'public square,' a mile away. After walking a little way, he finds that Patroclus has joined the select company. But still no . . . ! At this point he says to himself: "Really, I don't like this altogether. Although I suppose I shall get that name shortly, somehow I feel vaguely apprehensive when

such a well-known name can not be recalled, although I have its companions in mind. The name must start with an A, for the A names seem akin to the missing one. . . . This thing won't do—it's bothering me. I *will* get that name!"

So warmed up to his work and with a firm confidence that he can force the unwilling name to come in, he begins to plot and plan and analyze; whereas before he had contented himself with using the ordinary associative methods of sacred psychological tradition. So he works the subject over in his mind; decides that the name must begin with A, because of A's feeling of realness. Then he asks himself, "Which is more like the last syllable of the name, *-es* (from Aristides) or *-tle* (from Aristotle)?" He repeats over a number of *-es* names; they feel right. Then he tries the Proust-Lichtheim test on himself, and decides that the name has three syllables. But still it cometh not! He feels distinct dissatisfaction and unrest, though the feeling of apprehension has departed. He now definitely looks for the name to arrive on almost any train. Tired of waiting, he carries the analysis a step farther and decides to go over the alphabet in order to find the second letter of the name. So he starts: "*a, b, c . . .*" It has come, but he has to say it in speech internal before he is certain that the name is—Achilles!

The psychologist is interested in noting that the name does not seem exactly natural and familiar, though he knows it is all right. 'Achilles' seems a bit estranged on account of its cavalier treatment of our subject's mind. However, by repeating the name a number of times, especially when he pronounces it distinctly in a low whisper, he begins to feel that it is more 'natural.'

For several hours the episode came to consciousness at intervals, and always the name Achilles seemed a little *outré*; but while notes were being recorded anent the incident, the experiment of recalling all possible associations germane to the name was tried. Finally the association *tendo Achillis* came to mind, and thereafter the name seemed pretty nearly normal, though there is still, at the time of this writing, an atmosphere of coolness about it—somewhat akin perhaps to the feeling of our hero toward his acquisitive commander!

We may further note that though there was a slight wave of satisfaction of the relief order when the name 'came back,' a decidedly greater wave was felt when the association with *tendo Achillis* was recalled.

II

In this true story of a mental episode we have what Mr. Stout would call 'conative continuity and unity.' A conative disposition unfolds and determines itself.

Starting with a vague impulse of curiosity, we reach as a terminus a concentrated attempt to work out a problem and at the same time keep track of all that goes on in the mind concomitantly. It seems to me that there are three stages in the self-determination of the mental attitude, which, though initiated by a passing impulse of curiosity, soon develops into full-orbed conation with interpenetrating cognition and feeling, and finally issues in a close-knit form of heightened volition. Let us take up the stages in order, explaining the terminology just enough to make our meaning fairly plain.

1. *Attention and Interest*.—The hiatus in memory at once attracts involuntary or sensational *attention*. This attention wakes up its correlated feeling form of conation, *interest*. Attention now seems to be the fine adjustment of the mind's microscope, while interest is the large adjustment within the field of which the attention seems to work. There is a rhythmical give-and-take between interest and attention, though each is all the time present. Thus, at one moment a general, massive and diffused striving is predominant, and at another the consciousness of concentration and 'pointing.' At one moment there is concentration on 'Aristides' and 'Aristotle,' and at another, the consciousness, "This is queer," seems to be more prominent. The general level of feeling is distinctly heightened. Thought is more rapid and speech is quickened. The *exaltation* (clearness?) direction of feeling has been increased. The feeling attitude is that of alertness and mental 'aerial perspective.'

So far for conation and feeling. The cognitive aspect takes the form of an attempt at *assimilation*, with association by *continuity* and *congruity* as its modes. But the process lacks vim. Though conative, it is rather passive—not earnest and resolute. This is shown especially by the fact that the words 'Aristides' and 'Aristotle' are pictured as printed words, and come and go in consciousness in a rather lazy way. Consciousness has not yet got warmed to its task, and the subject's prevailing 'kinestheticism' has not yet taken hold of the situation.

Before passing on to the next stage, which of course is not sharply separated from the first, it may be of some interest to inquire into the conditions that helped the names Aristides and Aristotle into consciousness. I can not be quite sure, but taking into account the principles of frequency, recency, prevailing interest and the like, I should say that the following considerations may have some bearing. The day before I had lectured to an introductory class on man's *juridical* nature, and afterwards had read a review of DuBose's 'Gospel in the Gospels' wherein attention had been called to the author's fondness for Aristotle. The prevailing interest in psychology, pedagogy,

philosophy and the like would also tend to make these names appear, inasmuch as they are in general congruous in verbal form with the name Achilles as well as fitting in with things Grecian.

2. *Endeavor and Belief*.—A social tinge is given to consciousness by the conversation with the class. The assistant's genial interest has heightened this attitude. And it was in this connection that the more strenuous form of attention, the kinesthetic effort or *endeavor*, manifested itself. The intellectual machinery corresponded to the general muscular attitude; hence the efforts to recall took the form of traditional *imitation* of the usual thing done under such circumstances. At the time I did not realize this; but so it was, and naturally, because in such methods my own usual experience [(continuity) and my *en rapport* with friends (community) cooperated. I must note, too, that there was present at this stage a decided *belief* that I could get the word by working the mechanism of association. But perhaps the most striking thing about this part of the conation series was the appearance of a vague apprehension that my mental bearings were sadly in need of oil. This touch of emotion (kinesthetic *feeling*—not *sensation*) seems to belong quite sympathetically to the atmosphere of *effort, belief* and *sociality*. A transient *doubt* underlay the emotion of the anxiety order (fear). It was at this time, I remember, that I noticed myself striking my heels into the ground rather more vigorously than usual. Of this, however, I am not absolutely sure. But the further recollection of having internally *pronounced* the words Aristides and Aristotle is quite clear and definite (kinesthetic image).

3. *Pursuit and Anticipation*.—Some measure of fatigue and a subconscious desire to get rid of the feeling of apprehension seem to have brought on the third stage. Here *pursuit* takes the place of effort, and *anticipation* (pleasurably toned) supersedes belief to some extent. Perhaps it would be better to say that endeavor has ripened into pursuit and belief into anticipation. However that may be, there is no question about the presence of distinct attitudes of pursuit and anticipation, which seem to be the pleasure-pain (cœnesthetic feeling) aspect of conation. For the first time I was conscious of voluntary determination and decision to *end* the matter. The pain of uneasiness yielded to the *pleasurable* looking forward to results. The intellectual method now becomes constructive *imagination* with a problem on hand which it is going to solve. The method is partly a continuance of traditional use of association (community relations), and partly an active search for the Gordian knot by means of an analysis of the exact situation (congruity relations). This modality of thought and volition soon leads to the finding of the

word, and the wave of *satisfaction* (cœnesthetic feeling) follows, kept down in its intensity, however, by the strange ‘appearance’ of the erstwhile familiar word. It will be noted that now interest and attention start all over again on the new problem: How to make that word Achilles seem natural. It might be possible to trace the exact stages of this new conative series, but I regret to say that I did not observe it closely enough to give a real photograph of the process. And in this study, whatever may be thought of the analysis, I am anxious for the record of the facts to be kept straight.

In spite of appearing to hang heavy conclusions on a weak string of fact, and despite the show of a ‘system’ that may make some of the judicious grieve, I may be pardoned if I summarize my analysis by putting together in parallel columns the kinds of mental stuff that seem to me to go together in the three phases above mentioned.¹

First Stage.	Second Stage.	Third Stage.
Specific sensation images (sight)	Muscular sensation	Organic sensation
Somesthetic feeling (exaltation)	Kinesthetic feeling (fear)	Cœnesthetic feeling (pleasure)
Assimilation	Imitation	Imagination
Attention	Endeavor	Pursuit
Interest	Belief	Anticipation

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SUGGESTIONS TOWARD A PSYCHOGENETIC
THEORY OF MIND

FROM the scientific standpoint, the problem of psychogenesis is capable of fairly definite statement. Baldwin¹ insists that it is concerned exclusively with the question of development. Dewey² holds that it has to do with the instrumental character of consciousness. These two views are not opposed, although they involve a somewhat different line of approach to the problems of mind. They are differentiated by Hobhouse,³ who recognizes them as related topics of a single subject. Passing by the question of the ultimate

¹ For further notes on the terms here used see ‘Snap Shot of an Association Series’ in Vol. III., p. 435, of this JOURNAL; also ‘Snap Shot of a Dream Drama,’ in Vol. III., p. 705.

² ‘Mental Development.’

³ ‘Studies in Logical Theory.’

⁴ ‘Mind in Evolution.’

nature of mind, this writer remarks that mind is, by him, taken 'as a factor in organic evolution,' and he contents himself with 'pointing out certain more primitive factors of which it is the natural development.' By the evolution of mind he means the consideration of the growing complexity of the relations within consciousness through which new functions are assumed. But the growth or evolution of mind can not be shown except as we analyze out at each step forward what is peculiar to that stage. Hence, in its most general statement, the problem of psychogenesis is to arrange a series of steps or to mark out the epochs through which mind passes from its most primitive to its more developed forms.

The question of method is important because it affects our conception of the subject, and because it emphasizes differences between workers in the same field. Although Hobhouse, for example, agrees with Baldwin in his aim, namely, to trace the evolution of mind, there are differences between these writers as to the limits which this aim imposes. Baldwin starts within the field of biological facts and relations, and his task, consequently, becomes pressing at the point where the growth in the structure and function of living beings becomes so complex that there is little to mark off the field of the psychological from that of the physiological. It is significant that the 'origin of consciousness,' in the sense of a genetic progression, becomes, for him, an important consideration, and we are told that 'the rise of consciousness . . . would seem to be due to the influence of (certain specified) vital stimulations,' which are vital or necessary in the sense that they 'must have come to the particular organism by heredity.'⁴ Hobhouse, on the other hand, takes mind as a factor in organic evolution and he is only concerned to point out the conditions of its appearance. He puts aside the question of 'its origin in the organic world' and concentrates attention upon its evolution 'in the sense of that unrolling of its full nature which is what evolution most strictly means.'⁵ Connected with this difference is another which is important. It is, in the words of Hobhouse, whether mind is to be investigated as it 'is felt to be by its possessor,' or whether we are to be occupied 'with its operations as apparent to an onlooker.' The former is akin to, if it is not in part identical with, Baldwin's 'dynamogenic method,' but it is the latter which Hobhouse adopts for himself. A consequence of this distinction is that Hobhouse gives us a more objective treatment of the material—a detailed statement of cases, and their analysis, with a view to disengaging essential elements. This course recommends itself because we are enabled to keep clear

⁴ 'Mental Development,' p. 197 ff.

⁵ 'Mind in Evolution,' p. 5.

of the danger of reading exclusively the later in terms of the earlier, a danger which is particularly subtle when we pass from organic to psychic phenomena, and because, at the same time, we guard against surreptitiously introducing into the earlier what we want to get out of the later. When a writer has both a biological and a psychological interest, it is difficult for him to steer between these respective dangers. It is not clear that Baldwin has escaped either peril. For example, his use of the term *imitation* to cover any number of facts of the circular type without respect to the question of their organic or psychological character, gets one across many gaps before they have come in sight. But whether we can trace the progression throughout from any lower to the next higher stage, we can mark out with some degree of certainty the more important levels of mental development, which then become subject to more accurate description and careful analysis.

It will serve to bring the following suggestions into a single point of view if a word or two is said about consciousness. We agree with Baldwin when he says that psychology is concerned with the psychophysical individual. By a psychophysical individual we understand one whose coordinated movements take place with a view to effect, maintain and develop such relations with the environment as shall have a survival value. Consciousness is the term which we use to indicate this fact. There are, so far as we are able to discover, no facts which are called conscious which lose this characteristic. If this is what Brentano, following a suggestion of Kant, means by 'reference to an object,' our relations, in this regard, are sufficiently indicated. But what these statements enable us to emphasize is that psychology as a science of consciousness is *eo ipso* a science of concrete facts. The development of this science, then, would consist in describing the various typical situations in which the psychophysical individual may come, the various kinds of reference or outerness which are involved, and the points of starting of the processes of reference. No modification of this statement seems necessary, as is sometimes supposed, when the ethical, esthetical and religious experiences become the subjects of psychological description. To carry out the program just intimated would be to write an account of mental development in all its aspects. We shall confine ourselves to a single object, namely, to describe certain characteristic stages in the growth of mind with a view to pointing out the principles which control them.

There seem to be four closely related steps in the evolution of mind, to which we may give the names attention, suggestion, imitation and imagination. These we consider briefly in turn.

1. *Attention*.—This may be defined, in accord with our conception

of the nature of consciousness, as the *primary* reaction of a psychophysical individual to its environment. The environment may be regarded as the occasion of the arousal of certain congenital impulses which, without further direction, run their course, and terminate in the appropriate adjustment. Instances of this may be found in the first pecking of a chick and the suckling of a mammal. Here the individual does what he is fitted, by inheritance, to do. But he does not do it, as some psychologists seem to think, *in vacuo*. The environment is an essential factor of the observed phenomenon. Even from the observational standpoint, and we should think from the side of the experiencing subject also, the experience is so obviously one that we can not tell where the psychophysiological process ends and the psychophysical adjustment begins.

There are other instances where attention does not come about under the direction of inheritance, but quite accidentally, as it were. One might say, however, that even in the class of cases mentioned there is always an element of chance. In every instance where there is an absence of parental guidance this is so, and parental guidance, as in the case of the human infant, does not avoid, but only reduces the probability of a miscarriage of the aroused impulse. Thus Lloyd Morgan observed that the young chick at first would peck at anything of appropriate size. I have also observed that young kittens will suck at their mother without regard to the source of their food.⁶ In these cases, as in all others which belong to the same class, there is no inherited discrimination of what will satisfy the need which gets expressed in the impulse. In the other instances chance operates in another way. In the case of a congenital impulse there is no danger that the movement will not take place, the chance is that it will miss the appropriate mark. In those we have now in mind, the chance is that the movement will not be made, or that it will be made subordinately to some other project. In the former alternative, the phenomenon we are considering will not appear; in the latter, only if the movement is inhibitory enough to put an end to the main process do we have a case in point. The accidents of childhood, and the risks and dangers of the young of all species, are in evidence. One illustration from Kidd's recent book on 'Savage Childhood' must suffice (pp. 60, 61). "By accident," he writes, "the hand of the baby (a Kafir child of about a year old) came into contact with the hot lid of the pot; the hand was withdrawn at once—evidently by

* One kitten I knew, after it was taken from its mother and had learned to eat solid food, would, when taken on the lap, settle down with its nose against the person, take a portion of the dress into its mouth, and, if allowed to do so, suck at the dry goods until quite moist, accompanying this with gentle alternate pressing with the front paws in proximity to the dress stuff.

reflex action, for the child was not disturbed in its reverie . . . The child showed no conscious perception of its action. The attention of the child was called away to something happening in another part of the hut, when again its hand accidentally touched the hot lid of the pot. This time the child withdrew the hand more quickly, as though it had a vague and dawning consciousness that something had gone wrong somewhere. The child evidently did not grasp the fact that the painful sensation was caused by the contact of the finger with the hot iron. But, to judge from the expression on the face, a dim suspicion that this might possibly account for the sensation dawned on the child, for after a few moments of meditation, the baby, evidently with the idea of inquiry, put out its first finger and deliberately touched the pot. Having done this, it as deliberately withdrew its hand and looked at its finger in surprise; it then looked at the pot and seemed puzzled. . . . No sooner had the child recovered from this expression of surprise than it deliberately put out its finger against the lid of the pot. A short period elapsed in which nerve currents were traveling to the brain and were being sorted out in that very dull quarter, and then the baby set up a piteous howl and was promptly seized by its mother, who removed it from the danger zone."

This illustration is useful for more than showing the primitive character of the attention attitude; it helps us to see the process going on by which we pass beyond this primary attention to what is hardly distinguishable from perception. It also helps us to appreciate what perhaps the first illustrations would not, that attention may be viewed not only as a matter of adjustment, but also as a matter of something-which-merely-is. We have here something akin to James's 'pure experience.' The term might be appropriate enough were it not for the misunderstanding arising from the historical associations of 'pure.' We are accustomed to describe the phenomena in question as 'concrete experience.' Hobhouse, however, uses the same term for the objects which are given in perception, and which, with him, we should agree to call 'articulate' experience, if articulate meant something more than concrete.⁷ We do not insist upon terms; we only wish to indicate, what is the fact at this stage, that what has above been called outerness is at its maximum, that there is no discrimination between subject and object, that we have an unformulated feeling-of-something. That this is not just theory, we may refer to some experimental data published a year or so ago in the *Psychological Review*, N.S., Vol. XII. See especially pp. 175, 176 and remarks on p. 193 f.

⁷ *Op. cit.*, p. 116.

2. *Suggestion*.—We have stated elsewhere that by suggestion is meant ‘a clue developed in normal mental process which becomes controlling in the further development of that process.’ It is a principle of subjective control in the sense that it originates within, and in consequence of, the processes which are involved in carrying out the impulses which are characteristic of attention. Baldwin has shown that the primary adjustments with which we are concerned in the previous section are due to heightened central processes aroused by vitally appropriate stimuli; attention is motived by a distinctively pleasure-pain experience. The object fits in with the desire, and gives direction to it; the desire prompts to those movements through which it comes to an end in the appropriation of its object. The necessity by which attention is possible only through movement is the condition both of maintaining the continuity of mental life and of marking out the distinction between attention and suggestion. Attention is, phylogenetically, the satisfaction of desire; it runs a definite course, and comes to an end in specified adjustments. It is necessarily characterizd by fluctuation, it is also intermittent. But the movements which are instrumental to it give rise to a new class of experience which works within the original feeling-impulses to give them greater definiteness.⁸

Now, we may say that it is the way in which the involved kinesthetic sensations function in modifying and directing the feeling-impulses that characterizes the stage of mental development we have called suggestion. This is expressed in a general way by saying, as we have stated it elsewhere, that ‘conscious processes develop their own suggestions, which act as clues to the meaning of experience.’ This is another way of stating, what was said above, that suggestion is a principle of subjective control. Experience which has meaning has gained that meaning at the expense of the concrete outwardness which it had at the start. If, therefore, we are right in considering suggestion as a stage in the development of meaning, it must be, at the same time, a means by which outwardness is overcome, and at least the illusion of inwardness is produced. This is what we find. The original experience becomes *accessible*, and this is effected through the modification of feeling by the kines-

⁸ From the standpoint of the fixation of attention, the following from Ladd’s ‘Psychology, Descriptive and Explanatory’ (p. 67—*italics mine*) is pertinent: “The feeling of holding our organs steady seems to form no unimportant part of the support which the mind receives in its effort to give fixed attention. Now, it is by fixation of attention that the striated muscle connected with the organs both of sense and of motion is put into this condition of physiological tension. It is *the return feeling of this tension* which defines still further the character, and serves as the continuous support, of our act of attention.”

thetic sensations which arise in connection with the movements which are directed toward the satisfaction of the feeling-impulse. An illustration will make this clear. There is nothing which seems to us more inward than our aches and pains. The psychologists also tell us—doubtfully, we think—that our feelings are the most unsharable and individual experiences we have. No European or American would localize his headache, *e. g.*, anywhere else than in his own head. Hence nothing seems less necessary to inwardizing than movement and strain sensations. But if we go to the more primitive man, this would not seem to be the case. On the testimony of 'one of the most intelligent Kafirs' he knew, Kidd reports this man's recollection of his first headache during childhood. "He said he was conscious," Kidd writes, "that something was wrong somewhere, but did not dream that the pain was in his head. The pain might just as well have been in the roof of his hut as in the roof of his head; and it was only when his mother told him that his head was aching that this fact dawned upon him."⁹ We quote the instance for the purpose of showing the possibility of taking what we have called an attentive attitude toward feeling experience, and other cases might be quoted. The way in which this child came to a more intimate acquaintance with his headache belongs to a later stage than we have as yet reached, it belongs under imagination, which involves ideal control. But if we turn back to the account of the baby mentioned under 'attention,' we will readily see that the series of movements by which his finger came, accidentally and purposely, into contact with the hot pot was an important factor in developing the pain consciousness which overflowed into the 'piteous howl' which brought his mother to the rescue.

One other point remains to be mentioned. We have seen that in any *subsequent* act of attention the several paths are more permeable because they have become specialized through complication with the returning processes set up by movements involved in adjustment. The organism gets out to the object more surely. It does so under the stimulus of the sensations of movement which come in to define the course which leads to the desired end. But in facilitating the course of attention it, at the same time, introduces the condition which makes the definition of the object possible. Care, however, has to be exercised that too much be not attributed, at this point, to suggestion. The danger is that just as the function of suggestion has been read back into attention, so the function of imitation will be read back into suggestion. Baldwin seems to have done so when he speaks of 'suggestive imitation.' Bolton is also open to the same

⁹ 'Savage Childhood,' pp. 61, 62.

criticism in so far as he identifies perception with kinesthetic sensation. The process underlying suggestion, we have said, is for the furtherance of attention, it is to make the paths outward permeable. It is not to define the object, but to make the object accessible. But in doing this, it, of course, defines the object, but not as an object, not, as we should say, objectively; the object, the rather, is defined as a means for the satisfaction of a desire, and if there is a judgment, it is not theoretical, it is a value-judgment. In other words, we do not, at this stage, reach a perception. What we have is a sensation object, for, as Baldwin says,¹⁰ 'sensation enables us to react upon facts according to their immediate worth to the organism.'¹¹

3. *Imitation*.—Imitation is the process by which an external conditioning object which has become accessible in suggestion becomes the starting-point of a new function which, working in the reverse direction, makes a further determination of the object possible. It involves a principle of objective control in the sense that the object is now no longer a means to the satisfaction of desire, but becomes independent, that is, something to which the sensori-motor process has to be adjusted. In the case of the newly hatched chick, for example, more importance attaches, at first, to the edible material than to the inedible. At the level of development where food-supply is largely dependent upon the individual's powers of successful foraging, mental blindness to the negligible is a negative factor in emphasizing that definition of instinct which is brought about through motor reaction, and by which certain things come to be 'selected' as food material. But it is not obvious that what, from this point of view, is not positively important never becomes so. It is difficult to see how any development of mental powers could take place if the failure to satisfy an instinct resulted in every case in mental blindness to that class of things. It is, on the other hand, conceivable that the disappointment of a feeling-impulse may be an important element in the training of which the organism is capable. We have a suggestion of this in what are called protective phenomena. For here the conditions are exactly the reverse of those which determine the animal in the search for food. In the search for food, it is important to have an eye for the useful; protective reactions, on the contrary, depend upon an eye for the harmful. Thus, while chicks are blind to other chicks, they are put into a flutter at the approach of a human being or any other large and

¹⁰ 'Mental Development,' p. 291.

¹¹ For further data and remarks on this section the reader is referred to the *Psychological Review*, Vol. XI., pp. 267-269, 275, 276, 278-281; Vol. XII., pp. 183, 191-193.

moving object. This, of course, is, as much as pecking, an instinctive reaction; but it is important to remark that it functions through fear—a pain experience—and it inhibits the pecking instinct which is of the opposite, hedonic quality. How far the pecking and protective experiences fuse into one we are unable to say; but what we know is that they are capable of considerable modification, as every one who has kept chickens can testify. The fact to which we direct attention is that suggestion, which works within the original limits of instinct, and gives definiteness to it, gets modified under certain conditions so that the behavior of the animal is reconstructed in important particulars.

Modification of behavior is dependent upon the breaking up of habit. But no established mode of reaction can be diverted from its accustomed course except by the introduction of new factors, which, entering in, complicate the problem for future behavior. Have we any new elements at this stage which were not present in suggestion? It may be pointed out that at the level of suggestion we have Baldwin's circular-reaction, by which the useful or the pleasant tends to get itself accepted and repeated. For him, this is imitation. But if so, it is imitation in a novel sense, and everything in the psychophysical life, from the reflex gurglings and cooings of the infant up to and including the political and religious beliefs of the man, is imitative. It seems better to confine the term to narrower limits. Thus, for example, the pecking of the chick is imitative only to the observer, and because there are other chickens in the same environment doing this very thing. But the feeding of an infant is not imitative even in this sense, unless, perchance, it is a case of twins and they are both fed at once. Imitation, we should agree with Stout, 'is the impulse to perform an action which arises from the perception of it as performed by another.' It is for the first time 'present and operative at the perceptual level.'¹² But if this is so, it must belong to a later than the suggestive stage of mental development. Whence we have this insight, namely, that imitation is a twofold process in which not only the object comes to articulate definition, but the means are developed through which new adjustments, in the form of modified behavior, are made possible. If, now, we return to the question raised above,—namely, what it is that arrests an established reaction,—we can look for our answer nowhere else than to the object itself. The object as defined for suggestion is a sensept—a pleasure-giving thing. It is on its way to becoming a percept, a thing in its own rights, so to say, when, by ceasing to afford satisfaction to our subjective needs, it is able to disengage

¹² 'Manual of Psychology,' pp. 270, 269.

itself from the control of suggestion and to supply material which either was not present or was overlooked at the former level. It is, no doubt, the development of specialized sensory areas which makes possible the complication of the psychophysical processes which result in perception. But the specialized organs are, at the same time, the means which have grown in dependence upon the pressure of environment through which sensory material is fed in and becomes the clue to the nature of things. Things, then, are not merely things which exist in their relation to me, they are things into relation with which I must come if I am to exist at all. What we may, therefore, say is that the larger amount of sensory material which is in evidence at this stage introduces a change in the feeling state in which, under the guidance of suggestion, attention issues, and is the condition on which the sensept passes over into and becomes a percept.

It was necessary to indicate how perception is involved in, and is the outcome of the process of, imitation because current definitions of imitation presuppose the existence of 'copy,' and do not see that to give rise to imitation this 'copy' must not only be attended to but perceived. This, of course, grows out of the relation between attention and perception, by which it is supposed that perception is the more elementary and conditioning process. If, however, what we have said carries any weight, this relation has to be reversed. It is, for us, not true, as a question of development, that we attend to what we perceive, but the fact seems to be that we perceive what we attend to. This view affects the relations which we presume to hold between imitation and perception. They are phenomena, we believe, which arise at the same level of development, and, indeed, are to be considered as differentiations within a single growth era. They indicate different features of the objectification which takes place in building up the spatial world. It should be tolerably clear from what has already been said that perception is a process of altered adjustment to changes in the conditions by which experience is determined. But alteration of adjustment is imperative at the time of the change in the conditions, and is, therefore, only another aspect of the same fact. But when we look at the matter a little more closely, it becomes obvious that we can not define imitation in essentially different terms. It, too, is an adjustment to environment, and has the same end as all adjustment, namely, its appropriation.¹³ If in perception the object or situation is apprehended in a way which emphasizes its independent or uncontrolled character, imitation is only a further specification of the same fact. The point

¹³ Above we said that in suggestion the object was made accessible. We use the term appropriation in the present connection to indicate the change in the character of the adjustment which imitation implies.

need not be labored because current literature furnishes ample illustration. Imitation is, then, a term for a special class of perceptions, for those, namely, through my adjustment to which the perceived world comes to be differentiated into two subclasses—object-things and subject-things. Each of these controls behavior in definite ways, but it is only in regard to the latter that behavior can be called imitative.

With regard to this latter we may remark that it arises in a different environment from the former. The objective factors may be marked off as corresponding, broadly, to what we call the 'natural' and the 'social.' In customary terms we perceive what exists in space; we imitate what exists in time. But what we have indicated is that our reactions in these two cases are not psychologically different, and they terminate in the same cognitive act. They belong together at the same stage of mental development because they are significant of the same cognitive effort. What imitation aims at, and what perception strives after, is the ascertainment of the common, permanent qualities and relations of the object by which each is controlled, and to which the knowing mind is required to adjust itself. But just as we fail of perception when the object is the center of conflicting or contradictory predicates, so in imitation the common-to-you-and-me is seized upon and made permanent. This may be emphasized by saying that imitation is of as much importance to society as to the individual. It is interested in getting those things done which are characteristic of the group. It, therefore, paves the way and stimulates by social pressure the motor reactions in which the individual reproduces the common activities and sentiments of the whole. In this sense, imitation is a term which is appropriately applied to this class of reactions from the objective standpoint. But when this standpoint is changed, what we have to notice is that it is through these induced motor activities the individual comes to know the subject-things with which his own life is so intimately bound up. We can hardly say that the child imitates; what he does is to follow out the impulses which the social environment releases within him, and in this way arrives at a perception of his social *milieu*. Imitation, in other words, works through the congenital instincts which have become defined in suggestion for the purpose of leading the individual on the basis of his motor reactions to a perception of the class of objects which have been called subject-things.¹⁴

¹⁴ Data and remarks bearing on the topics in this section will be found in the *Psychological Review*, Vol. XII., pp. 197–206; this JOURNAL, Vol. III., pp. 404–407.

4. *Imagination*.—By imagination we may mean either the fact that, or the process by which, behavior is determined by ideas. Ideas have this important characteristic, that they belong to both sides of the contrasted halves of experience through which we have traced the development of mind—to the subject of the experience and to the world of the experienced. Usage indicates this, as, for example, when Külpe calls memory, imagination, etc., ‘centrally excited sensations,’¹⁵ and other writers refer to them as re-productive or re-presentative phenomena. This is what we should expect if our statement of the developmental process is correct; for what we have seen is that, beginning with an experience in which the factors are undifferentiated, the connections between them have been worked in both directions—from within, out, as in suggestion; and from without, in, as in imitation. Consequently, what we should look for in imagination is that the inner and the outer processes should be combined in a way which gives rise to a new objectivity as characteristic of the new level of mental life which the term indicates. We get some support for this expectation from the probable physiological conditions which underlie mental reproduction. We are led to believe that both central and peripheral processes are concerned in all representation. And if this view comes to prevail, what we may look for is that imagination will be the starting-point of a new development through which a differentiation of inner and outer similar to that which we have noticed, but at a higher level, will be brought about, and that in these higher developments science, art and religion will be seen to spring from a common root in the mental constitution of the race.

In treating of imagination, it is usual to separate out memory in a way which gives the impression that it stands in a unique position. The historical reason for this goes back to Hume, who feels free to refer to the phenomena of memory indifferently as ideas and impressions.¹⁶ There seems no good reason for continuing this usage, and we prefer not only, with Sully,¹⁷ to include memory and imagination under the single term imagination, but to extend its application to the whole developmental epoch which is based on any and every degree of reproduction. Imagination, then, is a term which does not denote a single faculty, but a group of faculties which is in developmental continuity with the earlier stages which have received mention.¹⁸ If, however, we wish to point out what distinguishes

¹⁵ ‘*Outlines of Psychology*,’ pp. 169–275.

¹⁶ ‘*Treatise*,’ Bk. I., Pt. III., Sec. 5; cf. Bk. I., Pt. I., Sec. 3.

¹⁷ ‘*The Human Mind*,’ Vol. I., p. 277 ff.

¹⁸ The extent of the term imagination is implicated in current philosophical discussions. From the standpoint of the text, the question between pragmatists

imagination from these earlier stages, we should say that it implies a principle of ideal control through which its various constructions are carried out. This may be illustrated in two directions, each standing for a definite stage in the development of imagination.

We said above that imitation referred primarily to that group of percepts which were called subject-things (Baldwin's personal projects). It was also pointed out that the intractable—experiences which are not controlled by us—were significant for future growth. It is not surprising, consequently, if we find in the other percept group—the object-things—the starting-point of the development of imagination. In this class of objects we discover what is psychogenetically the *point d'appui* of perception and imagination. From this point of view, imagination is an indirect method of overcoming the otherness which is insisted on by object-things.¹⁹ Let us take a simple illustration, namely, finding one's way about successfully in the dark. To find one's way about in the daylight one must, of course, have a practical acquaintance with the situation of objects and with the resistance of objects. The problem is the same at night, only its solution is greatly hindered by the absence of the conditions of clear perception. Now, among primitive men night work is not unusual, and if it is not essential to their safety, it is an important factor in their economic well-being. In this connection it has been pointed out that there is a remarkable development of the sense functions. This may be admitted without interfering with the contrast between night and day, and with the differences in the appearance of objects in consequence of this contrast. The darker the night, that is, the more completely perception was interfered with, the more successful would the enterprise promise to be, provided that the party could find its way without blundering against every obstacle in the bush or forest. Here, then, is a situation which made some substitute for perception imperative. Imagination, in its first stage as the image-making faculty, is exactly what is needed, for the tribe which, in plunging into the darkness, did not lose hold on the distinctions and directions of broad day would have a distinctly survival value. Imagination would, thus, come to have a practical relation to the life of the race; and we have it with us to-day as a selection because it appeared among our progenitors as an advantageous variation.²⁰

and idealists is this: whether thought introduces a new epoch in mental development, or whether what thought is and does is explicable by reference to the principles which are functional in imagination.

¹⁹ This remark also applies to subject-things in so far as they are also object-things. But it is to be noted that imitation does not rest upon this feature, but upon the fact that they are not entirely predictable.

²⁰ It is not the distinction between perception and imagination which is, at

Ideas do not differ from images in the fact that they are less concrete and sensuous, but in the fact that they give control over a different part of the perceptual world. Images, we have seen, are developed under the obscuring conditions of vanishing light (we need only to consider visual images) from object-things, and are the means by which we retain contact with, and control over, the world of perception. Ideas, on the other hand, have their psychogenetic origin in the fact that it is important not only to know what and where things are, but what things may be expected to do. From this point of view, the fixed objects of the environment are relatively unimportant, because they present few, if any, alternatives. The subject-thing, however, always presents a number of possibilities which, because of the alternatives involved, render the issue problematical. Now under 'imitation' we pointed out one large group of social interests, those, namely, in which all the members of the group were alike interested. Here we found the material of imitation.²¹ Imitation, we saw, works upon and within the limits of the individual's congenital endowment, and stimulates to activity processes which eventuate in similar overt actions. The phenomena of play may be cited in illustration. Imitative activity, that is, is socially controlled. The end is determined from the beginning, and its causation lies in the psychophysical mechanism which is inherited.

first, important; but the ability to be guided by the one or the other in practise. So we may say that the perceptual gradually fades into the imaginary for primitive man, in much the same way as he fails to distinguish between his waking and dream life. The world of imagination, as the world of perception, provides for the primitive races an objective field for action. The genetic progression from perception to imagination may be indicated briefly as follows: In *perception* we have the determination of objects in space together with the relations which depend upon the perceptions themselves. The *after-image*, of which the positive form is directly important here, illustrates the possibility of the continuance of the objects of perception when some of the conditions of perception are absent. What we may call the *sense-image*, by which is meant the sensed presence of objects in our environment which have not for the purpose of the present behavior been perceived, indicates that there is a form of control by present objects, although the conditions of perception are entirely inoperative. The blind, perhaps, are guided by this form of imagination, but it is not wanting to those who have all their senses. The *image* presents the object of perception freed, wholly or in part, from its support in the contextual world of perception. It is a movable item of experience capable of entering into any combination according to the practical or theoretical need of the moment.

²¹ *Per contra* cf. Baldwin, 'Social and Ethical Interpretations,' 4th ed., p. 504 ff. Our disagreement with this author does not extend to the denial that 'thought' may or does become the matter of social organization, but that there is no social organization without it, that is, prior to the stage of development at which 'thought' emerges. If Baldwin's statement is correct, 'thought' must be present from the start, a supposition which subverts the whole genetic interest and inquiry.

But, from the standpoint of the group, it is equally important to provide the conditions which make variation possible. Social variation is the same fact, from another side, as individual initiative. Here we enter distinctively the social or sociological field. Sociological phenomena are concrete situations in which the individual's reactions are undetermined. The image, therefore, can be of no service here. We need a new instrument for the control of such situations. Common speech indicates as much. Suppose we were asked what we would do under such and such extraordinary circumstances, and the answer of each of us would likely be, 'I have not the least idea.' 'Idea' in the answer, corresponds to 'do' in the question, and both indicate a relation. We are called upon to solve a social problem, and our answer must be some form or other of action²² through which the relations within the group are put in a new equilibrium. In this form of imagination, consequently, the individual makes a difference to society, as in imitation society makes a difference to the individual. As in imitation society gets its way with me, so in imagination (ideation) I get, *pro hac vice*, my way with society. Ideas, then, are instruments for the control of society. It is through ideas that social strains and stresses are resolved. Now, do ideas ever get freed from their dependence upon concrete situations, and are they ever anything more than answers to particular needs? In other words, do ideas ever become ideals? If so, we may make our way from sociability to morality, in which the free idea functions and controls both the individual and the group in themselves and in their relations to one another. This is possible; we may say, it is probable. The question, however, must be left with the statement; the limits of the present discussion have been already reached.

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REVIEWS AND ABSTRACTS OF LITERATURE

Introduction to Philosophy. GEORGE S. FULLERTON. New York: The Macmillan Co; London: Macmillan & Co. 1906. Pp. xiii + 322.

An introduction to philosophy, because it is to be used by young students of the subject, should be above all things a clear and interesting outline of the main questions to be dealt with, a manual of practical directions as to how to proceed and what to expect, and an indication of both the method to be pursued and the sort of solutions to be reached in philosophical investigations. It need not necessarily contain a carefully grounded and elaborated system, although it should leave no doubt in the

²² Cf. Wundt's statement, *Jedes Denken ein Wollen*, 'System des Philosophie,' p. 42.

mind of the student as to the general nature and vital significance of such a system, or the direction in which it is to be sought for. Professor Fullerton's book must be said to be admirably written. Like his larger 'System' it is likely not only to inform, instruct and practise the student in philosophical reflection, but also to interest and entertain him. Moreover, it contains many practical suggestions to both the teacher and the student well calculated to clear the ground and the air, giving to the undertaking of the young philosopher a wide sweep of open territory and a wholesome atmosphere. The book "aims to tell what philosophy is. It is not its chief object to advocate a particular type of doctrine."

Nevertheless, a doctrine is here advocated, and readers of Fullerton's larger work are invited, as a help to the understanding of the latter, 'to follow the simple statement' of the present work and then return to the other. Here as there the doctrine advocated is "on the whole, a justification of the attitude taken by the plain man toward the world in which he finds himself. The experience of the race is not a thing that we may treat lightly." In the midst of a somewhat subtle discussion of time (p. 96) the text bids the reader 'come back to the world of the plain man, the world in which we all habitually live.' Many philosophies begin by pointing out the contradictions and the crudeness of the view of the world held by the plain man and by the majority of the race. Here is one which makes it his *pou sto*, his *terminus a quo* and *ad quem*. Such a method is at least sane and safe. There is, however, a certain pedagogical difficulty in the way of using Professor Fullerton's books as texts with beginning students. In thus hoisting the plain man into the position of a philosophical authority we are apt to mislead students into an attitude of distrust and scorn, not only toward all historic systems of philosophy, but also toward the very attempt to think clearly about real things. Delighted with this very interesting championing of the plain man's view of the world, it is just possible that the student will afterward hear nothing of any other philosophy. The teacher may find himself forced to defend the attempts of such men as Plato, Aristotle and Hume.

The plain man's view of the world, as outlined in Fullerton's 'Introduction,' is apparently quite simple. There is an external world which is not a mere construction of the individual ego. We may call an object in that world either a group of sensations or a thing, 'according to its setting among other experiences.' Taken by itself, no simple and elementary experience can be either a sensation, a thing or the attribute of a thing. It must be part of a context and have a setting before it is either. Things are not groups of sensations nor *vice versa*, if we use the words properly. There is a subjective order of things mental and an objective order of things material, and what belongs to the one does not belong to the other. The work before us accepts these orders on the authority of the plain man, and does not inquire further into their origins. In the objective order we distinguish between real things and things which are only apparent. The former are things as revealed to touch, the latter

are things as seen and heard. The real, objective world is the world of touch. The world of sight and sound is its symbol. "The real world of things, for which appearances of sight and sound serve as signs, is a world revealed in experiences of touch and movement" (p. 62). "Each appearance, then, must be referred to some particular real thing and not to any other." "The realities to which we actually refer appearances serve to explain them." No unknowable, or reality in general and at large, can explain any appearance. Real space is all the actual and possible relations of arrangement—the order—of what is revealed by touch and movement. It is the 'form' of the touch world. It is in no sense a thing (p. 83). It is the whole plan of the world system, or rather it is *a* plan, for what is true of space is also true of time. They are the real forms of the real physical world of touch experiences. The mind, on the other hand, is constituted of experiences of the subjective order, and none of these exist in either time or space (p. 126 ff.). As to the relation of mind and body, parallelism is a 'protest against the interactionist's tendency to materialize the mind.' Parallelism is a figurative expression, and must not be taken literally. The relation of the mental to the physical is one of concomitance rather than one of causation. We know that other minds exist neither by intuition nor by proof, but by analogy. The mechanical conception of the world is a useful working hypothesis which is not proven to be true. Minds exist and somehow belong to the total world. Men are not automata, and 'nothing can be active except as it has a mind' (p. 163).

Neither here nor in his larger work does the author criticize or further define the subjective and objective orders of experience. They are shot out of the page at the reader even as among the Scotch realists. The contention that the real objective thing is the thing as revealed to touch is, as held by Fullerton, a modification of Berkeley's doctrine. The reviewer does not find it justified by his own experience, and Fullerton himself has indicated another use of the term real (as the important) which ought to be made more of even in an introductory work. And we say this while thoroughly approving of his repeated statement that reality in general, the unknowable, explains nothing whatever in human experience, and that explanations must be as particular as the phenomena to be explained. Fullerton's restricted definition of parallelism is not the ordinary one, and we can not help wondering whether when so used the term means anything more than the doctrine that there must be some sort of uniform relation between things mental and things physical which does not do violence to the nature of either. That we know other minds to exist by analogy seems to be a deduction from neither psychology nor practical experience. It is not supported by what we know of the history of the mind in the individual and the race. My knowledge that I have a mind and my knowledge that my neighbor has a mind are not two, and the one is not derived from the other. Mind is a social thing from the start. And this leads us to remark that the plain man's uncritical dis-

inction between mind and matter when applied as an explanatory distinction to the individual man gives rise to problems which the beginning student would better be warned against.

Parts IV. and V. of the work before us deal with some types of philosophical theory, and the philosophical sciences. These features of the book make it especially suggestive for teachers. The text is necessarily very brief, so much so that it is a question whether it conveys very adequate conceptions of the subjects mentioned, but the text is to be used by a teacher, and in his hands it will doubtless prove invaluable. A stranger to philosophy and to the author of this book could hardly fail to recognize that it is the work of an old and very sympathetic teacher, and this is especially true of the last part, on the study of philosophy. The very questions which students inevitably ask themselves are here put and answered in a sensible and effective way, that is reassuring even to one who has already taught the subject for some years. Eleven pages of notes and a six page index close the volume and add to its usefulness as a text for lecture room purposes.

The style of this book, the striking personality which sits before the student and dominates his subconsciousness while he reads, are fascinating. One must praise the clearness and force of these presentations. But the chief problems and conceptions of the work were characteristic of the latter half of the eighteenth and the beginning of the nineteenth centuries, and dominate only the cruder metaphysics of the educated masses of our day. It is a splendid thing to criticize popular metaphysics in such a way as to arouse interest and start trains of reflection which may lead to better conceptions of life. This book ought, consequently, to prove very useful and effective throughout this very large class of interested readers, and in the hands of a wise teacher it ought, for this very reason, to prove a splendid text for beginning students.

G. A. TAWNEY.

NEW YORK CITY.

Die philosophischen Grundlagen der Wissenschaften. B. WEINSTEIN.
Leipzig and Berlin: B. G. Teubner. 1906. Pp. 543.

The author, professor of *Physik* and *Geophysik* at Berlin, attempts here to organize under a professedly Kantian type of theory all the material of current epistemological discussion in the form of a popular *Kolleg*.

Experience is to be understood in terms of a real world, and an independently real soul which enters into commerce with that world. It is a natural consequence of the situation thus pictured that we must regard the intelligible part of experience as property and product of the soul, not of the real world: for an outer world can not supply us with the instruments whereby alone we can enter into relations with it (p. 119). The soul must have an equipment of concepts *a priori* in order even to put questions to this world; and without questioning, no significant experience. Abstract from any experience all that is due to 'experience,'

and something will remain behind necessarily contributed by the soul—if only the capacity for having that experience (p. 88). Thus the ultimate units of explanation are *Seelenthätigkeiten* and *Seelenvermögen*. And they are legitimate units; for whatever mystery may surround our whence and our whither, yet ‘was wir sind, was wir innerlich vermögen, ist uns völlig bewusst’ (p. 217).

Fundamental among these activities are certain purely formal ones, which in a way define the soul’s independent nature: attending, dividing and uniting, comparing, retaining, and reflecting, all of them subject to the will-to-know. Actual intercourse with the world requires in addition to these the *Anschaungsbegriffe*, temporality, spatiality, causality and substantiality. The peculiarity of Weinstein’s work lies in his deduction of these *Anschaungsbegriffe*: for he finds their primary application, not in the manifold of experience, but in the original psychological activities themselves. Temporality, for example, is primarily the form of *change* of psychological activity—a sort of differential of flux, not of the materials of attention, but of attention itself (p. 226). So causality, of which temporality is entirely independent, is first found, not in the rules of external sequence, but in the necessary expectation that a change in inner activity must follow a volition (p. 245).

This inwardness of origin is at the same time the highest guarantee of the apriority of these *Anschaungsbegriffe*, and the chief source of doubt of their worth in expressing the nature of the outer world. This doubt it is that leads the author to describe his view as ‘absolute subjectivism’ (p. 218). He sees, indeed, occasionally how precarious the position of the alleged outer world is, on his principles; “weil wir nicht einzusehen vermögen, wie absolut verschiedene Dinge zu einander eben in Beziehung sollen treten können” (p. 129). But he has no thought of dismissing this outer world. He makes even our *a priori* self-consciousness depend on a known contrast therewith, ‘a consciousness of being other than the rest of the world, in spite of being connected with it.’ It is not clear by what title such a position is called absolute subjectivism. The significance of this name may perhaps best be seen in the author’s discussion of our more consciously constructive thinking, namely, in hypothesis and in interpretation, poetic, philosophic and religious. “Wie die Seele alles nach ihrer Art wahrnimmt, bildet sie es auch nach ihrer Art fort, als entzöge sie sich der Aussenwelt so weit nur irgend möglich, um ganz mit sich allein zu sein” (p. 501). Complete subjectivity appears here as the goal of our efforts to know reality, not as our present attainment!

A cursory reader may find the kernel of Weinstein’s doctrine in his thirteenth lecture; and this might be supplemented by lectures eight, fourteen, fifteen and thirty-one. Although the author may be credited with a certain facility in recognizing philosophic issues, the work is in no sense a serious contribution to philosophy. Besides the external faults of haste and looseness, and a style which is made repellant by strained appeal to an imaginary popular taste, the idealistic propositions have

apparently been hardly understood by the author, so little does he seem aware of their bearing upon the mass of material he brings together.

WILLIAM ERNEST HOCKING.

UNIVERSITY OF CALIFORNIA.

The Mind and Its Education: GEORGE HERBERT BETTS. New York: D. Appleton & Co. Pp. xiii + 265.

In his preface the author tells us that 'this book is intended as an introduction to psychology for teachers, both in their private study and in their reading circle classes, for students in secondary schools, normal schools or colleges, and for general readers.' After two introductory chapters which take up the definition of consciousness and attention, there follow chapters on the nervous system, sensory and motor training, habit, sensation, memory, instinct, emotions, will and the other subjects usually discussed in introductory psychologies. These various topics are discussed briefly and with the aid of some very good illustrations. In general it may be said of the psychological principles presented that they are sound and familiar. Each chapter ends with a series of questions or practical examples and a short list of references to the larger works on psychology.

The criticisms which one naturally makes against the book are based very largely on its omissions. It is very striking indeed that a book on psychology intended for teachers should have no chapter or discussion on language. Perception is very little considered. The description of sense qualities is comparatively long, while the way in which one recognizes objects is treated very summarily. There is no discussion of any of the problems which concern the teacher whose function is to teach writing or number. In spite of the title of the book, there is little emphasis on the changes which go forward in consciousness in the course of development, the references to development being rather by way of hortatory application of principle derived from the analytical portions of the study.

In view of the necessity of such large omissions in order to keep the work within the limits set by the author's plan, it must be seriously questioned whether it would not be better to use one of the larger works as an introduction and not attempt to make psychology popular by cutting it down and using chiefly illustrations. Students do not lack in illustrative experiences. They are, on the other hand, altogether unable to give any scientific account of those experiences which they have. What they need is adequate discussion of a few typical experiences. Psychology should devote itself, more than most sciences, to systematic interpretation. It is a fallacy to assume that examples from poets and those who have striking experiences constitute psychological science. These examples are very interesting matters, no doubt, and are raw material for science, but they do not add to the student's knowledge at the point where he is most deficient.

Especially a book which is offered to teachers should solve some of the

riddles that arise in practical experience, or it should not be announced as any more closely related to teaching than an interesting book on any other science.

Such criticisms as these are forestalled by the author in his preface by the frank avowal 'that the text is much more descriptive than explanatory; that a constant appeal is made to the experience of the student to verify the statements of the text; that the matter presented is largely concrete and little abstract.' As a brief descriptive text, it is very suggestive; as a concrete statement of a number of facts about mental life, it is not unsuccessful. Whether the appeal to the student's experience is direct when made by way of text-book statements of parallel experiences, is the question raised in the critical remarks offered in the foregoing paragraphs.

CHARLES H. JUDD.

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NEW BOOKS

Bergson, H. *L'évolution créatrice*. Paris: Felix Alcan. 1907. Pp. viii + 403.

Blewett, George John. *The Study of Nature and the Vision of God: With Other Essays in Philosophy*. Toronto: William Briggs. 1907. Pp. ix + 358.

James, William. *Pragmatism*. New York: Longmans, Green & Co. 1907. Pp. xiii + 309. \$1.25 net.

Volkelt, Johannes. *Die Quellen der Menschlichen Gewissheit*. Munich: C. H. Becksche Verlagsbuchhandlung. 1906. Pp. 134. 3.50 M.

NOTES AND NEWS

THE following summary of a paper on 'Intuition' read by Mr. A. T. Shearman before the Aristotelian Society on May 6, is from the *Athenæum*: "There is a two-fold part played by intuition in philosophical researches. The process is employed, firstly, at the commencement of philosophy, where there is intuition of certain individual facts and of certain general propositions; and secondly, in the selection of a method of treating these data. It is because intuition is thus employed that there exist so many differences between thought systems. Future philosophical work may proceed along the lines that have hitherto been followed, or there may be combination among thinkers. The latter procedure would be likely to produce more satisfaction than the former. Satisfaction to human minds is the only test of the value of a philosophical system. The more intense and widespread the satisfaction, the nearer, it may be hoped—but not proved—is the system to the truth. A system reached by means of cooperation may well give place in the future to another, since the group of intuitions that form the starting-point for the combining experts may be characterized by incompleteness or by error; and in any case intuitions of the truth of general propositions change with successive generations of men. Owing to the position

of intuition in philosophy, discussion can never lead a man to adopt another's ultimates. Clear and accurate statement of premises, method and conclusions is alone useful to effect such adoption. Exhortation would be always useless and sometimes dishonest. The subjective self can not be intuited. To say that such self observes itself, but not as an object, is to rob the word 'observation' of all connotation. When we say that the self is observed we are speaking of the objective self. The subjective self is known indirectly, its existence being involved in the existence of pleasure and pain and of attention. Not that we feel the act of attention; those who hold that we do are really referring to a feeling of cerebral and neural strains. Dr. Stout's doctrine that we have 'immediate experience of felt tendency' involves us in a truism or in a doctrine which he rightly rejects, or else the existence of a known tendency is based merely upon the occurrence of pure feeling, a position which is clearly untenable. Not that we directly distinguish pleasure from pain, for we only distinguish the intellectual changes that are produced by such feeling. This view necessitates our adoption of the doctrine that the elements of sense-content are immediately perceived. Dr. Hicks rejects this doctrine, but his substitute would not allow of our *recognizing* a quality. His view is refutable on this ground, but not on the ground sometimes alleged, that, unless one had experience of contents immediately perceived, the denial of their existence would be impossible. The latter argument is invalid, for the utterance of an *A* proposition does not necessitate the experience of one of the objects referred to by the subject term. On the contrary, the class may be formed by means of intension, a process which sometimes is alone available, *e. g.*, in the formation of the null-class. The subjective self is thus an inference from certain presentational changes that can not be ascribed to physical stimuli, and Ward's view is justified. We can truly form an idea by means of constructive imagination of our own subjective self, but we can not intuit the identity that exists between the object corresponding to this idea and the subjective self that is involved in the formation of the idea. There may, however, be immediate direction of our attention to another subjective self; this, that is to say, may be among our presentations. Dr. Pikler affirms that it can not, but he is inconsistent in his use of the word 'presentation.' If we remember the function of intuition in philosophy, and the grounds of our assertion of the existence of the subjective self, the meaning of such statements as 'I know that I know myself' becomes clear, and some portions of the free-will problem are solved."

ACCORDING to the *Psychological Clinic*, "It is reported that the director of the Harvard Psychological Laboratory is about to make the laboratory useful in the direction of an examination and classification of the backward children of Cambridge."

AT Amherst College, Professor W. J. Newlin, associate professor of mathematics and psychology, has been appointed associate professor of philosophy. He will continue next year the work he has carried on since the death of Professor Garman.

PROFESSOR HEIBIG, the Danish philologist, has discovered a new manuscript of Archimedes at the Convent of the Holy Sepulchre at Constantinople. The treatise is said to give new information about the predecessors of Archimedes.

M. HENRI POINCARÉ, professor of mathematical astronomy at the University of Paris, has been appointed a member of the Council of the Teaching of Fine Arts, in the room of the late M. Berthelot.

FELIX ALCAN is to publish in the autumn the second volume of Jacques Bardoux's 'Essai d'une psychologie de l'Angleterre contemporaine,' dealing with such current phenomena as 'les crises politiques' and 'protectionnisme et radicalisme.'

THE publication board of Teachers College, Columbia University, are receiving subscriptions to promote the republication of the work by Dr. Sequin entitled 'Idiocy and its Treatment by the Physiological Method.'

THE *Revue de Philosophie* begins in the May number a careful summary of the lectures being delivered at the Sorbonne by M. E. Durkheim on topics in the history of religion.

JAMES MACLEHOSE & SONS, of Glasgow, are to publish a new history of Philosophy, by A. B. D. Alexander.

'MOTHER GOOSE, PH.D.,' contributed to the May *Century* by Mary Jessie Gidley, will no doubt prove interesting to the readers of the *Journal*. We therefore quote it in part:

A PHILOSOPHICAL DIFFICULTY

Little Miss Muffet
Sat on a tuffet,
Studying Hume for exam;
And she said, "I can't see,
If ideas are me,
Just exactly where all of me am!"

DISCUSSION

John Boyce would not read Royce;
His friend would not read James;
So they monized and they pragmatized,
And called each other names.

TWO SCHOOLS OF PHILOSOPHY

Hickory, dickory, dock!
The pluralist looked at the clock;
The clock struck one,
And away he run;
Hickory, dickory, dock!

Hickory, dickory, do!
The monist looked also;
The clock struck ten,
And he looked again,
And said, "It is three hours slow!"

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

A REVIEW OF PRAGMATISM AS A THEORY OF KNOWLEDGE¹

IN preparing this paper I have become aware in myself of a certain habit of mind. It has arisen, I imagine, from repeated attempts to clarify obscure issues in lecturing to students: but whatever its psychological source, it seems worth while to describe it for the light which it throws upon the theory of knowledge to which I shall be more or less explicitly appealing in my criticism of pragmatism. I find myself attempting to demonstrate, in the sense of *showing* or *making to appear*. Philosophical topics, to be sure, do not readily lend themselves to this mode of treatment; nevertheless I find myself imagining that the object of inquiry may somehow be set down between my hearers and myself where we can survey it together and perhaps eventually agree because we are both looking at the same thing. In other words, I always try to simulate the presence of the experience to which the problem refers. The present task, involving both my readers and myself, would thus seem to me to be the joint examination of a complex but familiar experience wherein Messrs. James, Schiller, Dewey *et al.* have found certain elements and relations which they take to be highly significant, and

¹ In making this study of pragmatism, I have relied mainly on the following sources: William James: 'Humanism and Truth,' *Mind*, N. S., Vol. XIII.; 'Pragmatism's Conception of Truth,' this JOURNAL, Vol. IV., p. 141; 'A Defense of Pragmatism,' *Popular Science Monthly*, Vol. LXX., Nos. 3 and 4. Schiller: 'Humanism'; 'In Defense of Humanism,' *Mind*, N. S., Vol. XIII. John Dewey: 'Logical Studies'; 'The Reflex Arc Concept,' *Psychological Review*, Vol. III.; 'The Experimental Theory of Knowledge,' *Mind*, N. S., Vol. XV. A. W. Moore: 'Existence, Meaning and Reality in Locke's Essay,' University of Chicago Decennial Publications; 'The Functional *versus* the Representational Theories of Knowledge in Locke's Essay,' University of Chicago Contributions to Philosophy. G. H. Mead: 'The Definition of the Psychical,' University of Chicago Decennial Publications. H. H. Bawden: 'The Functional View of the Relation between the Psychical and the Physical,' *Philosophical Review*, Vol. XI.; 'The Functional Theory of Parallelism,' *Philosophical Review*, Vol. XII.; 'The Meaning of the Psychical from the Point of View of the Functional Psychology,' *Philosophical Review*, Vol. XIII.

which they have more or less consistently and intelligibly described in their theory of truth. Does the same experience reveal to us what it has revealed to the pragmatist? Will what the pragmatist sees there stand the light of renewed examination; will it resolve itself into something else, or will it vanish away like a ghost at the approach of dawn? Is pragmatism a reality, an illusion or a hallucination? In thus formulating the question I am supposing that truth is discovered and critically inspected experience; that to know is to see, whether with the bodily eye or with the eye of the soul; and that knowledge is perfected when the idea coincides with its object in direct apprehension. Whatever the outcome of our inquiry, there is a certain immediate advantage in the use of this method; for it makes negative criticism impossible. If we are unable to confirm the finding of the pragmatists, it must be because we have found something else.

If pragmatism is to be examined in the manner which I have indicated, it is necessary that we should first discover its locus in experience. What is pragmatism a description *of*, or a theory *about*? Now it is entirely clear that pragmatism is not, primarily, at least, a theory of reality, but a theory of knowledge. The term truth is here used as qualifying thought rather than being. At the very outset there is danger of confusion because of the ambiguity of such a term as truth. It is of the very nature of knowledge that at the point where it is true it sustains relations of peculiar intimacy with being. It is both true *for* a knower and true *of* being. Indeed, the same ambiguity attaches to the term knowledge, for knowledge is not held to be really knowledge until it is true. But it is clear that the pragmatist arrives at what he calls truth by following the series of thought rather than the series of being. There is a stage in thought at which the thinker possesses the assurance of truth, after the raising of some question, the trial of alternatives and the affirmation of some one of them. The thinker at length believes or makes up his mind; and in this experience thought is concluded. The enterprise is finished, and the activity suspended, even though at some later time the thinker may be compelled to judge retrospectively that he was in error. "What we want," says Professor Dewey, "is something that takes itself as knowledge, rightly or wrongly."² Since, then, the truth which the pragmatist is talking about is the concluding phase of thought, we may properly refer his description to the experience of *arriving at belief*. This may be said to be the locus of pragmatism; and in examining this experience we ought either to see what the pragmatist sees or something which accounts for it while correcting it or

² 'The Experimental Theory of Knowledge,' *Mind*, N. S., Vol. XV., p. 20.

replacing it. I have found the pragmatist's description of the thought-process highly obscure, but shall venture a brief preliminary outline of what I have been able to understand and verify for myself. He marks in the first place what we may call a prediscursive experience wherein knowledge and its object are not as yet distinguished. In this experience the controlling principles are practical. Life is going on, consisting in attitudes appropriately expressing desires and purposes. The organism is herein well adapted to its environment; it possesses sufficient familiarity with the environment to run smoothly and act unhesitatingly. But there now appears a new phase of experience in which the properly cognitive situation stands revealed. The transition is described by Professor Dewey as 'a disintegration of coordination,' by Professor Moore as an 'interruption in the continuity of habit' and by Professor Bawden as a condition of 'tension.' This, as I understand it, is the state of thought as that arises in the course of conduct. A situation puzzles me, and I require so to conceive it as to be enabled to resume my action. Such a moment is analyzable into the following factors:

1. *Reality, or Beliefs already Fixed.*—This element of experience is the object (this term now appearing for the first time) in so far as already known. The pragmatists would seem to disagree among themselves as to whether sensation belongs to this category or to the next. Let us designate this factor of the situation by the letter *M*.

2. *The Object as Problematic.*—This is the disturbing factor, consisting in a sensation as yet unresolved, or in a general discord which makes the situation practically unworkable. Let us designate this factor as *x*.

3. *Ideas*, or, to quote Professor Moore's phrase, '*Instruments of Reconstruction.*' These elements, which we may designate as *a'*, *b'*, *c'*, are tentative interpretations of *x*, and mark the period of deliberative hesitation.

4. *The Noetic Interest.*—Herein appears for the first time the subject or the knower himself, experienced as a particular need actively attempting to relieve itself. Let us designate this as *S*. *S* is not to be identified through its content so much as through its 'polar' relation to *O*.

The interest *S* will be realized when, *x* having been assimilated to *M*, conduct is resumed and experience enters upon a postdiscursive immediacy. The resolution of the situation will take place in something like the following manner. *S* projects judgments *x is a'*, *x is b'*, *x is c'*, etc. Of these *x is a'* alone proves compatible with *M*. In the selected affirmation *x is a*, *a'* loses its ideal status and becomes homogeneous with *M*, but at this point *M + a*, or object believed, loses its objectivity or difference from *S*, and the cognitive experience is replaced by the normal practical immediacy.

Now, the locus of truth, as the pragmatist describes it, is the point at which this complex cognitive structure begins to collapse or shut up. Some such process indubitably occurs, and the pragmatist is correct in directing our attention to its critical moment. The locus of true knowledge is doubtless at the point of transition from discursive to immediate experience. But *what in this moment constitutes its truth?* To answer that question correctly is to answer the question which pragmatism, as a theory of truth, explicitly raises. Unfortunately, the answer of the pragmatist is not clear or unequivocal. Indeed, there seem to be many answers which are not reciprocally necessary, if, indeed, they are compatible. To the end of clarifying the issue I shall from this point forth discuss seven distinct propositions, all of which refer directly or indirectly to the situation just described, and all of which are to be found in the current writings of the pragmatists.³ Some of these propositions seem to me to be a correct reading of the situation, others not. Whether pragmatism requires that they shall all be true or can identify itself with some of them, I shall leave it to the reader to conclude.

I. *Truth in Knowledge is always Relative to a Particular Intention.* The pragmatist together with the idealist has done well to insist upon this proposition. The truth or falsity of any judgment depends, as every one will readily agree, upon what is meant. No one attempts either to verify or to refute any conclusion until one has identified its reference. One can always escape a specific charge of error by saying, 'I did not mean that.' One who does not mean anything or who can not distinguish what one means from what one does not mean, may from the critical point of view be disregarded entirely. However, it is important to guard this generalization. The truth or error of knowledge is relative to an intention to know some one thing rather than some other thing, to know *x* rather than *y*, and not upon an intention to put the knowledge to some use. Thus, I may intend to vote for the man with the cleanest record, and proceed to discover him; but it is the latter intention alone, the intention to discover that one among the candidates who has the cleanest record, to which my ensuing belief is relative as respects its truth or error. It is clear that the truth or error of one's judgment depends upon what one wants to know, but there is no ground for saying that it depends upon what one wishes to do with the knowledge when one gets it. One may always reserve beliefs for subsequent uses that

³ Three of these propositions will be examined in the present paper, and the others in a paper entitled 'A Review of Pragmatism as a Philosophical Generalization'—to appear in a later number of this JOURNAL.

at the time of their formation are highly problematic. It may be true that one always wants knowledge for some other than cognitive purpose, but such ulterior purposes, vague and tentative as they are, clearly have nothing to do with that *specific* intention upon which the proof of a judgment turns.

We may follow the pragmatist, then, so far as to agree that the truth or error of a judgment involves reference to the particular situation in which it arises. The truth or falsity of the judgment *x is a* could not be proved by any knower who was not in possession of *x*. There is still, it is true, a very significant question which the pragmatist has not clearly answered. How is an intention to be identified? How is the question 'What is *x*?' to be distinguished from the question 'What is *y*?' Questions can not be identified merely through identifying the thinker, for the same thinker may ask many questions, and many thinkers may ask the same question. Reverting to the general thought process as described above, I can find no answer to this question unless we are willing to designate the intention by its real content. I find that an intention to know some particular thing is identified only through that particular thing which one intends to know. In other words, a problematic *x* can be distinguished from a problematic *y* only so far as *x* has a being, or real quality, different from that of *y*. In this case, then, *x* in the above analysis must always be homogeneous with *M*, except as respects clearness or adequacy. The significance of this will, I trust, appear later. There is a certain verification of it in the fact that whenever we are in doubt as to our cognitive intention, we deal with experience as realistically as possible. I can best indicate to you what I am thinking about by pointing to the thing itself or setting it down between us.

II. *The Proof of Knowledge Must be Contained in the Process or State of Knowledge.* Professor James says: "Is it not obvious that even though there be . . . absolute sailing directions in the shape of prehuman standards of truth that we *ought* to follow, the only guarantee that we shall in fact follow them lies in our human equipment? The ought would be a *brutum fulmen* unless there were a felt grain inside of our experience that conspired."⁴ Although this is an important and far-reaching proposition, I do not hesitate to accept it; for it appears to me to be self-evident. It means, for our purposes, that all the elements for the proof of knowledge must be contained within the thought process itself, as analyzed above. The guarantee of knowledge as true can not consist in any *ab extra* verification. If *I* am to know at all, I must be cognitively self-sufficient.

⁴ 'Humanism and Truth,' *Mind*, N. S., Vol. XIII., pp. 464-465.

The verification of my knowledge must be internal, an experienced relation between my intention and my progressive enlightenment. All of the elements which enter into my conviction of truth must be elements of my own experience. I can be convicted of error only through being led to correct my own initial experience in the light of my own wider experience. To suppose the contrary is equivalent to declaring of every particular state of knowledge that in itself it is not true knowledge. Even if we prefer to conceive of one absolute knower as alone typical, we must suppose even such a knower to rely upon his own internal conviction, even for the knowledge of his own finality. If the absolute is to know that he is absolute, the proof of it must lie among the elements of his own experience. But if we thus restrict knowledge to the absolute knower, we involve ourselves in a predicament as embarrassing as it is unnecessary. For it would then follow that only an absolute knower could know that there is an absolute knower. Indeed, such a proposition as is involved in the judgment 'I know that only God knows' (equivalent to 'I know that I can not know') is a flat contradiction. We can not even attribute to an absolute knower any superior qualifications for knowledge except such as arise from a completer experience of the particular things which he proposes to know; and similarly the sufficiency of my own experience will always be determined by the degree to which I have covered the particular things which I propose to know. There is no virtue in irrelevant experience, no matter how widely it may be extended. The way to adequate knowledge is not the general increase of experience, but close application to the matter in hand. We conclude, therefore, that if knowledge is not to be pronounced absurd *a priori*, the so-called finite or human knower must glean truth out of his own experience; must, in short, find among the elements embraced in the cognitive experience as above analyzed the certification of his own knowledge.⁵ This is, of course, far from saying that the proof of truth must be referred to the caprice of the individual, for among the elements contained in the individual experience are certain elements which possess the status of reality or being. These are as proper parts of the cognitive process as is the alleged active interest which distinguishes itself from them. Our conclusion thus far means only that to know truly involves nothing beyond what is covered by the knower's own experience. •

The issue is sometimes obscured by phrasing the question: How do I know that I know? But this complexity of phrase contributes

⁵ It could easily be shown, following out what has been said above, that unless one could know within the bounds of one's own experience, one could not even *intend* to know.

absolutely no additional meaning. I know that I know in precisely the same way that I know anything else. What we are seeking is not a description of that particular kind of knowledge in which knowledge is also the object known, but a description of that which is common to all cases of knowledge. How do I know that x is a , that y is b , or, in general, *how* do I know?

Now thus far I find in pragmatism nothing from which experience forces me to dissent. In every case of knowledge there is an intention, and the proof of truth must be an experienced sequel to that intention. In every case of true knowledge there is one who intends, and it is he, if any one, who knows the truth concerning his intention. It is revealed to him. True knowledge is sought and found by a knower in one identical and self-sufficient process.

III. *The Mark of the Truth of Knowledge is the Satisfying Character of the Practical Transition from Cognitive Expectation to Fulfillment, or of the Resolution of Doubt into Practical Immediacy.*—I have had no little difficulty in thus phrasing what I believe to be the crucial thesis in pragmatism, but I trust that this proposition when elucidated will prove acceptable. In the analysis with which I first presented the problem, I indicated what we may all agree to be the moment at which knowledge becomes true. There is a period of arrest followed by a moment of release. This series may with entire propriety be construed in practical terms. It possesses all the characteristics of a practical enterprise,—interest, desire, hope, fear, suspense, excitement, delight, and a satisfaction which gradually loses its feeling intensity. If I describe the moment of truth according to its place in this series, it will undoubtedly be that moment in which suspense is relieved and replaced by satisfaction. Now the pragmatist, as I understand him, conceives that when that moment is thus described the element of truth is defined. The truth of belief, in other words, is to be marked by its place retrospective and prospective in the enterprise of thought. Thus Professor James says that, according to pragmatism, ‘the truth of any statement *consists* in the consequences, and particularly in their being good consequences.’⁶ Now it must be observed that the essence of the matter is the degree to which the satisfying character of the crucial moment *constitutes* its truth. That the truth when sought and found is satisfying, no one will be disposed to deny; but to say that the satisfaction element is identical with the truth element is another matter. And it would seem to me that the frank empiricism of the pragmatist here provides a disproof of his conclusion. Having insisted properly enough that true knowledge belongs to a practical context, he neglects the fact that precisely at the point where

⁶ *Op. cit.*, pp. 31–32.

knowledge is true, it belongs to another context, namely, that of reality. In the very analysis of the pragmatist himself, we may find that which *conditions* the satisfaction to which the pragmatist attaches so much importance. It is because x when construed as a may be assimilated to M that the tension is relieved. It is because the statement is verified through being found consistent with reality, that its consequences are good. There is, in other words, a ground for the satisfaction taken in truth. The knower is satisfied with a certain condition into which his experience is resolved. Truth satisfies because of what it is; the knower, if he is but faithful to his own intention, will be satisfied with nothing else. The pragmatist admits that knowledge is true in so far as verified, but emphasizes the adventure of *verification* to the neglect of that in which verification consists. Now if we examine closely into the nature of the verification, and keep in mind what has been said concerning the intention of the knower, the facts seem to be clear. I can not intend to know x without already experiencing, to the extent of distinguishing, the object which I propose to know. My intention, in other words, is a partial knowledge of the object. My tentative judgments, since they must refer to the object, must be intermittent and equivocal experiences *of it*. When some one of these judgments is verified, some such partial experience steadily persists and develops into the object. But let us refer more explicitly to our introductory analysis. M is reality accepted as such; x designates my intention and must belong to the same context, because it is (though problematically) an object known to be real. When my judgment x is a is verified, the experience $M + x$ gives way gradually to the experience $M + a$. Now M is described by the pragmatist as reality. If we substitute for the term 'reality' the phrase 'funded belief,' we have only postponed the issue; for we are supposed to be analyzing a typical instance of the formation of belief and the typical instance involves the acceptance of something as real. We may say, then, that whenever a belief is formed or knowledge is taken to be true, some problematic or confused element of experienced reality is through further examination completed and coordinated with other elements of experienced reality. The essential factors, *consistency* as well as *reality* and *quality*, are all objective, given and not supplied. A judgment is verified when upon further inspection and confrontation with reality it stands its ground. In other words, a judgment is true in so far as it coincides with a proposition or complex entity which is found with its distinguishing characters upon it, and its consistency about it.

The processes of knowledge which for the pragmatist are most

typical, are those in which there is a high degree of indirection. The greater the pomp and circumstance of knowledge, or the dramatic interplay of interests, the more important the element of satisfaction. But it is clear that this does not in itself determine truth. I may put experience behind me and make a game of finding it without thereby enhancing the truth of my discovery; for upon the showing of pragmatism itself it is the moment of confirming experience in which the truth shows its face, and there are many such moments in which circumlocution and anticipation play a very small part. It is in perception, enriched and made adequate by thought, that the cognitive moment is seen to the best advantage; and there one knows truly because one's knowledge merges into its object. Now, undoubtedly, indirection is characteristic to a greater or less degree of all knowledge. As I can not know, neither can I, humanly speaking, think, without the use of language and various other expedients for substitution; but it is a fact which the pragmatist is far too inclined to overlook that in cognition symbols can not be employed without an antecedent and explicit knowledge of their reference. It has been possible for me to use verbal symbols in the present discussion only because they may put the reader in mind of the same object which I am contemplating in my own thought; and the truth or falsity of what I say has reference not to the existence or consistency of the words, but to the existence or consistency of certain elements of experience which all parties to the discussion may directly have in mind. So far as I am able to see there are only two legitimate kinds of substitution in knowledge. In the one case, the substitute serves as an index, as a means of communication or record, which will point the thinker to a certain region of experience. In the other case, as when I study social movements in statistical tables, the substitute is partially identical with the object. In both cases my thinking, in so far as true or false, is in terms of the object itself. I think about that to which the verbal symbols point me or about that which is common to the representation and to the object. If this be true, the proof of truth must be sought not in any relation between the terms of discourse as such, but directly in the elements and systematic relations of real experience.

The realistic view which I have here briefly indicated, is, I understand, held by some pragmatists to be consistent with that doctrine; but if this is to be the case it would seem to me that pragmatism must be so reworded as to lose its radical character. It would then mean that truth, since it is an attribute of knowledge, must always be related to a cognitive interest and have characteristics which are derived from that context. This is a very different thing from

saying that one is to look to these characteristics for its proof. For pragmatism as a radical doctrine truth is held to *consist* in an experience of satisfaction, such as 'All's well, now I can act.' For realism truth consists in an experience of identification, such as 'Here is *a* or *M + a*.' These two theories strictly held and strictly interpreted are not compatible. The pragmatist insists that true knowledge is a function of the process of knowledge. The critic of pragmatism insists, firstly, that true knowledge is also a function of the thing known; secondly, that in this latter functional relation is to be found the element of truth. Truth, because it is a part of the cognitive interest, must satisfy; but because it is *truth* it must envisage reality.

In this criticism I have not resorted to a general and vague insistence that true knowledge must 'correspond' to its object. I agree with the pragmatist that this is to take refuge in confusion. At the same time I would insist upon emphasizing the object as the element which plays the determining part in the constitution of truth. Experience seems to me to reveal the identity of true knowledge and its object. The object with what is true of it, and knowledge when true for the thinker, are one and the same thing. But this thing may be regarded in two ways because it belongs to two different series. If the object is approached along the cognitive series, then its uniqueness, its distinction in that series, is due not to its place in that series, but to its belonging to another series. The term *true knowledge* in the cognitive series is marked by its being the term in which this series intersects the series of reality. If the pragmatist is willing to accept this conclusion, then the issue is greatly clarified; but he can not, I believe, do so without largely abandoning those generalizations and philosophical corollaries of which he makes so much.

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DISCUSSION

CONTEMPORARY REALISM AND THE PROBLEMS OF PERCEPTION

IN the issue of this JOURNAL for May 9, Professor B. H. Bode has criticized the contemporary or monistic forms of realistic doctrine on the ground that they show a disposition to evade certain classic difficulties in the theory of perception, difficulties which have in the past invariably led those who faced them away from the naïve

realism of common sense into the dualistic or inferential realism of popular philosophy, and thence on, by an inevitable dialectic, either to agnosticism or to subjective idealism. Professor Bode's criticism seems to me just. Before a new doctrine can be established it is usually necessary to make a place for it by attacking its rivals, especially if the latter are firmly entrenched in popular favor. The proponents of the new realism have consequently expended most of their energies hitherto in an attempt to arouse idealism from its dogmatic slumber by exposing the fallacies incidental alike to its Berkeleian and its Kantian forms; and aside from this more or less ungracious work of refutation there has been time only for brief and somewhat schematic formulations of the new theory in its positive or constructive aspects. Professor Bode's recognition of the existence of monistic realism¹ and his reminder of the peculiar difficulties with which it is confronted, would seem to offer a suitable opportunity for essaying what is always the second and more interesting step in the development of a doctrine—namely, the testing of it pragmatically by an application of it to specific problems.

Professor Bode first asks the realist to state 'what conception we are to form of those objects which are commonly regarded as subjective.' "However much we may insist upon the proposed extension of the term object, it must be conceded that objects fall into two classes, those of which the conditions coincide with the conditions of consciousness and those which exist whether there is an awareness of them or not. To the former belong objects such as emotions, reminiscences and volitions. There is a sense, however, in which this coincidence of conditions must undeniably be regarded by realism as a mere accident. Or, to put it differently, just as it is possible for realism to conceive a world of material objects in which the conditions for consciousness have somehow failed to become realized, so it must likewise be possible to conceive a world which includes emotions and volitions, but without awareness. Such objects, I submit, are meaningless."²

As this criticism appears to be based on a slight misunderstanding of the theory criticized, it will not be out of place to state once more the distinction between dualistic and monistic realism. Every realistic theory holds it to be true that some objects do not depend for their existence upon the fact that they are known. Knowledge

¹ By monistic realism I do not, of course, mean any doctrine that would conflict with metaphysical pluralism, but only that epistemological monism which opposes the dualistic or representative theory of knowledge according to which objects and the ideas by which they are known are regarded as two incommensurable orders of facts.

² 'Realism and Objectivity,' this JOURNAL, Vol. IV., p. 260.

or consciousness is regarded as a relation which these objects may or may not sustain to one another. But dualistic or Cartesian realism restricts this relational conception to objects that are known indirectly or merely inferred. Directly perceived objects are thought of as 'mere ideas' existing *only* in the mind, and constituting an entirely different order of existence from that of real objects. The adjective 'dualistic' applies to this Cartesian and Lockean doctrine, for the world is made to consist of two types of beings—the natural system of bodies and events in space, on the one side, and, on the other, a spaceless and therefore extra-natural realm of minds and their ideas: while to *knowledge* is left the necessarily mystical and ungrateful task of joining together what a dualistic nature has so effectually put asunder. The way in which the idealist meets this situation is well known. He simply cuts out the self-subsistent natural world of material bodies in space and leaves only the super-natural or spaceless realm of minds and their ideas or states. The world of reality thus becomes restricted to the world of *experience*. Systems of planets and systems of electrons, with the severely beautiful laws that govern their evolution, are given over to the scientist with the proviso that they are to be treated as mere artifacts, constructs or abstractions from human experience.

The monistic realist deals with the *impasse* of dualistic realism in a fashion that is equally revolutionary and more genuinely 'Copernican.' Instead of leaving out the Cartesian world of natural objects, he retains that world and leaves out the super-spatial and super-natural system of 'minds' and 'ideas.' He extends the relational theory of cognition to all objects—to those that are directly perceived in sense perception no less than to those that are merely inferred as the transcendent causes of perception. He is monistic in his epistemology because he believes in only one system of realities, the realities in space and time; he is realistic because he believes that no object forfeits its objective or self-subsistent character by chancing to stand in the consciousness relation. So far the contemporary realists are, I believe, in agreement. All contents of consciousness or experienced qualities are objects of the same order of reality, each one a constituent member of one and the same spatio-temporal system of nature. Consciousness itself is a relation between these objects. But now arises the question as to the *kind* of relation that consciousness is. A monistic realist, as such, is only committed to defining consciousness as a relation between natural objects, but not necessarily as itself an objective or natural relation of the same order of reality as the objects which it relates. Whether, for example, Mr. G. E. Moore would be willing to treat 'diaphanousness,' or whether Professor Woodbridge would be willing to treat 'impli-

cativeness' (which are the characteristics that these two realists seem respectively to regard as most distinctive of the consciousness relation), as in themselves objective natural facts, I do not know. I ventured to christen my own brand of monistic realism 'panobjectivism,' to express the belief that not only all contents were objective, but also that consciousness or subjectivity itself was an objective fact, *i. e.*, a relation existing in a material nature along with other relations and, like them, describable ultimately in terms of the basic relations of space and time.

To return, then, from this explanatory digression to the point of Professor Bode's criticism. I find no difficulty from the standpoint of panobjectivism in admitting to the critic that there are certain facts such as decisions, emotions and feelings that are incapable of existing apart from consciousness or awareness. But note that if consciousness is itself a purely objective and natural relation the dependence of other facts upon it will not confer upon these latter any peculiar status, nor make them any less objective than if they lacked this dependence. The weight of a body depends upon the relation of that body to some other body, yet, notwithstanding such dependence, weight is as objective as inertia or figure and altogether on the same level as these seemingly more intrinsic qualities. I dare say there is no object the existence of which does not depend upon the relation subsisting between some other objects. Indeed, the goal of science seems to be nothing more than the correlation of every phenomenon with those relations between other phenomena upon which its appearance depends.

Professor Bode, in his second criticism, asks whether or not the new realism would regard the quality cognized in sense perception as numerically identical with the quality pertaining to the physical object. "If the distinction [between the immediately perceived object and the physical fact inferred to be its cause] is denied, the conception of objectivity becomes meaningless; while if it is affirmed we are forced back, after all, into the subjectivism from which it is the function of panobjectivistic realism to provide deliverance. . . . If there is numerical identity between the quality of the object and the quality perceived, we are obliged to say that the object possesses simultaneously all the qualities revealed in the different perceptions. Or, more specifically, we must be prepared to assert that an object may be both red and gray, both moving and stationary, both square and oblong . . . an object that possesses this incomprehensible fullness of character whereby it is enabled to be all things to all men is merely a name for the fact that experience takes place. . . . When error ceases to be possible the object loses forthright its title to existence. If, however, we resort to the second

alternative and affirm a numerical distinctness between the quality perceived and the quality possessed by the physical object, the case is not much mended. We have now two orders of reality instead of one. . . . And it seems obvious that the question of the relation between these two different orders introduces anew, and in substantially the same form, the whole problem of dualism or subjectivism upon which the earlier realisms were wrecked.'³

Professor Bode has here stated, and, as it seems to me, in an unusually clear fashion, the most difficult problem in the whole theory of knowledge. Monistic realism certainly has not solved it. It is equally certain, though not mentioned by the critic, that no other epistemological theory has solved it. I venture to think that a profoundly important step toward its solution has been taken by the new realists in their unanimous recognition of the truth that perceived object and real object are at least the same kind of facts, and belong together in one and the same spatio-temporal order of material nature. Whether they are numerically identical, whether merely similar in quality, or whether they are neither similar in quality nor identical in substance, are questions which might be answered differently by the different members of the group. In the hope that other realists will be tempted to formulate more adequate solutions of this all-important problem, I will indicate briefly and tentatively what seem to me to be the lines along which an answer to Professor Bode's criticism should be sought.

I will begin by stating three propositions, which must for the purposes of this article be regarded simply as postulates, no attempt being made to prove them. They relate to the perceptual process, which from the genetic point of view consists of three stages: (1) the emission of an influence from a physical object in space; (2) the reception of that influence in the form of a stimulus by a living organism and its consequent transformation into a sensation; (3) the transformation of the sense datum into a perceived object located in the space outside the organism in a point sometimes the same as, but at other times different from, the point from which the stimulus proceeded. The three postulates severally refer to these three stages: from physical object to stimulus, from stimulus to sensation, from sensation to perceived object. Professor Bode's question concerning the numerical identity or difference of the *terminus a quo* and the *terminus ad quē*m of perception can only be answered on the basis of a conception of the nature of the intervening links of the process.

First postulate—concerning the nature of the physical object and the stimulus emitted by it. Every physical object consists not

³ *Loc. cit.*, pp. 261-2.

of an indestructible substance, but of the energies flowing from all parts of space into the space occupied by it. It is a focus of energies. Each form of energy or *kinesis* is capable of being symbolized as a simple function of ds/dt , and with each of these forms of kinesis there is correlated a form of *stasis* or *quality* capable, perhaps, of being symbolized as a simple function of dt/ds , the reciprocal of the function symbolizing the energy. This would express the truth that wherever there is change there must be some thing or quality that undergoes the change—a mode of the static for every mode of the kinetic. An object is, then, not only a group of inflowing energies superposed upon one and the same part of space, it is also a system of the qualities correlated with those energies as their reciprocals. Now a material object as thus constituted is, of course, a center of outflowing no less than inflowing energies. Some of the energies that are radiated in all directions from it impinge upon the termini of the nervous systems of animals, and are then called sensory stimuli. *Each stimulus as a mode of energy has correlated with it a specific QUALE.* The quantity and quality of the stimulus express the nature of the object which is its source except for such modifications as may have been imposed by the medium traversed.

Second postulate—*concerning the nature of the physiological stimulus and the sensation into which it is transformed.* The chief source of the apparent hopelessness of the stimulus-sensation problem is due to the assumption that specific qualities occur exclusively in the realm of consciousness, and that the 'real' world contains only primary qualities, which means, when consistently carried out, that it is a nexus of quantitative relations without terms. The psychophysical problem is made to appear as the problem of determining how energy in the form of a nerve current lacking specific quality can pass into a sensation which is conceived as being nothing but quality, as lacking physical energy and as existing nowhere in space. According to our first postulate the stimulus emitted from an object has correlated with it a specific quality, and the passing of stimulus into sensation now appears as the production of the qualified energy of a sensation from the no less qualified energy of a nerve current. We shall assume as our second postulate that when an externally observable current of kinetic energy in an afferent nerve fiber passes or seems to pass into a sensation, that what really happens is the transformation of kinetic energy of motion into an equivalent potential energy of stress at the point in which the kinetic energy is redirected, *viz.*, the move center.⁴ However fantastic their identification may at first sight appear, it is worth noting that sensations

⁴ Cf. Karl Pearson's 'Grammar of Science,' note, p. 42.

and stresses resemble each other in two very significant points: (1) They are both conditions into which, at its points of obstruction or redirection, kinetic energy passes and from which it comes; (2) they are both essentially inaccessible, i. e., 'potential' rather than 'actual' to any conceivable external observer, and possess that peculiar privacy and invisibility which is recognized as the distinctive attribute of mental processes and regarded as the chief justification for treating them as having no locus in space. *Whenever the potential energy at a nerve center is greater than the inflowing kinetic energy which is its cause, then there exists a consciousness of the quality of that energy.* In a paper entitled 'A Theory of Time Perception'⁵ I expressed the same conception from the point of view of the time problem, pointing out that when the traces of past action of a stimulus exceed in intensity the present inflow, the phenomenon of a specious present, or duration-phase of existence, was made possible. It is only in consciousness that several successive moments of time can be present together in one moment; and the conditions for the occurrence of a duration or specious present and the conditions for the occurrence of consciousness are identical.

Third postulate—*concerning the relation of the sense datum to the perceived object into which it is transformed.* In that simple type of consciousness called sensation, the quality of which we are conscious has for its apperception-mass only its own past states, and there is a consequent absence of the subject-object polarity so characteristic of the more advanced types of cognition. The quality felt and the feeling of it are inseparably blended. In the perceptual field of objects to which sensations give rise, the case is quite different. Each sense datum as soon as it occurs, is surrounded by a 'fringe' composed partly of the traces of sense data associated with it in the past and partly of the other sense data coexisting with it. All of these centers of stress form an interconnected system each member of which inhibits or intensifies or in some way modifies all the others. In such a system there would naturally exist at each moment some one point at which the stress resulting from the intersecting energies which are proceeding from the various sensory centers was greater than any one of these energies. Such a point would constitute the ego-center of the perceptual field, with regard to which the surrounding sensation-centers are organized into a system of mutually compatible *objects*. The prominence or vividness of the various objects would no longer depend upon their intrinsic sensory intensity, but upon the extent to which energy was fed back to them (in the form of what we call 'attention') from the

⁵ *American Journal of Psychology*, January, 1904.

ego-center in excess of the energy which they contributed to it. From this it would follow that one content could normally gain in vividness (*i. e.*, in the extent to which it was attended to) only at the expense of a corresponding loss to the contents at the opposite 'side.' And in order that the 'back stress' or outflowing energy of attention should be in excess of the inflow from the various sensation centers, it would be necessary for some of the sensory feeders of a perceptual psychosis to be unconscious, *i. e.*, to contribute to the energy of attention more than they received from it. Such a system of psychical objects would differ profoundly from a mere group of sensations. Contents having the same local signs or other relational similarities would be grouped together into clusters, and the qualitative components of each cluster, instead of having the independent substantive character belonging to them in the sensation phase, would now manifest an adjectival character and appear as attributes inhering in the cluster as in a substance or thing. And as with the elements of each cluster, so with the various clusters, each object would appear as inhering in or as presupposing the system of objects as a whole. The relational scheme of the system would be felt as prior to its particular members precisely as space and time are felt to be prior to the things and events that occupy them.

To sum up this account of the psychophysical process: We have held (1) that physical objects are centers of inflowing and outflowing energies and that they also consist of the qualities correlated with these energies; (2) that some of the energies emitted from objects do after more or less modification impinge upon the sense organs of animals, and that, after undergoing a further modification of their nature consequent upon passing from the merely physical medium of air or ether into the physiological medium of the nerve fiber, these energies, when they reach the higher centers in the nervous system, undergo a redirection during which they must pass from the kinetic into the potential phase of being, this 'potential' or invisible phase of energy being regarded by us as identical with sensation; (3) that these sensations when connected in one system induce a center of stress or ego from which their several energy currents are reprojected as a field of perceptual objects back and out into the same real space and time in which their physical causes are located. The whole process can be put in a clear though not necessarily a convincing light by imagining a vast system of dynamos (the physical objects) whose energies are given off in the form of electric currents (the stimuli). A fraction of the energy of these currents is converted by means of an interconnected system of electromagnets (the brain cells) into centers of magnetic stress (the sen-

sations), which centers of stress are reflected out from a common center as lines of force (perceived objects). Or, more simply, though less exactly, we might compare the relation of stimulus and perceived object to the relation of a ray of light incident upon a mirror and the same ray reflected from the mirror. The idea being that the nervous system serves as a mechanism for correlating and reflecting back in the form of an indivisible and invisible field of stress a portion of the more or less visible kinetic energies which stream upon it.

We may now return to Professor Bode's question as to the points of identity and difference subsisting between the physical sources of nerve stimuli and the perceived objects which they produce. Let us consider first the question of identity of substance, second, identity of quality, and third, identity of position in space and time. On the basis of what has been said, it will be at once evident that the perceived object is identical in substance (because composed of the same energy) with a part or aspect of the physical object, *viz.*, such part as has directly in the form of a present sensory stimulus or indirectly in traces of past sensation flowed into the organism. The identity is here much the same as that between the reflected and the incident light ray.

Secondly, as to quality, the question is more complex. It is certainly true that the difference between the physiological and the purely physical mediums is so great as to make it probable that the quality of a given stream of energy is radically changed in passing from the latter to the former medium. It is probable, for example, that the specific quality correlated with the ether wavelength that produces perceptual red, when the optic nerve current which it arouses is transformed into potential energy in the visual center, is itself something as different from red as the odor of musk. On the other hand, it must be borne in mind that according to our first postulate the real stuff of which an object is made is nothing but the energies which are flowing into that object from all other objects. A particular object, in other words, is nothing more or less than the whole universe as it happens to focus itself or project itself on some particular point. Consequently our own perceptual activity when directed to an object contributes to the nature of that object just as truly, though, of course, not so largely, as the sun's shining upon it. The attributes which we ascribe to it do forthwith belong to it. Does it then follow, as Professor Bode says, that the nature of an object is indeterminate, that it can be all things to all men, that its appearance is its reality and that error and illusion are meaningless? No. We can and do discriminate between the total mass of attributes ascribed to it and those few which are com-

possible or compatible with one another and with the total system of our perceptions. These *compossible* appearances are segregated from the general mass of appearance and contrasted with them as 'reality.' A mere appearance is simply a reality that has failed to harmonize with other realities, while conversely a reality is nothing but an appearance that has stood the test of our comparisons with other appearances. A thing as it is 'in itself' is a thing as it is for the whole universe of things collectively. It is the resultant of its appearances from all possible view-points. I, in perception, am one of these view-points and a member of the universe, hence what the thing appears to me to be, in the full light of all my other knowledge, that it really is throughout the length and breadth of the world as known to me.

Thirdly, as to the identity of position in space and time of the real and the perceived object. Just in so far as the locus of an immediately perceived object is actually found to be different from its locus as ascertained by comparison of all attainable perceptions, why, just in so far it is different. In all purely direct perception there is a definite and measurable aberration or displacement of the time locus or date of events due to the time taken by the stimulus in traveling to the brain. The events which we see at present are the events of a little time ago. As all things are in motion there is also a space aberration, which, however, is so slight and so uniform as not seriously to trouble us. The two encouraging points about our perceptual knowledge are (1) that it is good and *real* so far as it goes, and must be presumed to be true until proved to be false; (2) that the very distortions and errors of perception are mutually corrective when compared together in that wider social type of perception which constitutes reflective knowledge.

I would add in conclusion that if the account which I have given of the psychophysical process seems fanciful and crudely materialistic, it yet has a claim to consideration on the ground that there are no other theories in the field that do not lead either to the paradoxes of subjective idealism or to the still greater paradoxes of psychophysical dualism and parallelism.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Psychology of Religious Belief. JAMES BISSETT PRATT. New York: The Macmillan Co. 1907. Pp. xii + 327.

This volume is a happy addition to the rapidly growing literature of religious psychology. It deals with a side of the subject that as yet has

received scant attention from the scientific students of the religious consciousness. While the valuable works of Coe and Starbuck are devoted principally to the study of conversion, and James's great work is concerned largely with mysticism, Professor Pratt presents us with a study of belief.

The work is divided into three parts, treating respectively of the psychology of belief in general, the manifestation of the three typical forms of religious belief in history, and the status of religious belief at the present time. The author begins by a classification of what he regards as the elements of the mental life. Mental phenomena in his view consist of two main types, the central and the marginal. The center of consciousness consists of what is clear-cut, definite, of all that is analyzable and describable, while the margin or background consists of all that is indefinite and indescribable, private, subjective, incommunicable and sub-conscious. Among the central experiences, again, we can distinguish two subdivisions—sensation and ideation—which show a marked difference in character. The marginal experiences are not so easily analyzed into subdivisions. Yet in a rough way one can distinguish two sorts of psychic material, 'feeling and what is known as the phenomena of the background.' The background, or fringe region, can not be clearly marked off from feeling. They are more like one another than is either to sensations or ideas. "All pleasure-pains, all feelings of tension and relief, of excitement and depression (if we adopt Wundt's classification) have the same lack of clear-cut outlines, the same irrational and private nature, the same subjective and non-representative quality, that characterize the background" (p. 12). While feeling and fringe are theoretically distinguishable, they are nevertheless so closely related that the whole class of non-rational, marginal experiences may be called the 'feeling background.' It is of especial importance to note the intimate and direct relation of the feeling background to the organic life. Here are found our vital needs, our instinctive desires and impulses, our native antipathies and tendencies, our deepest loves and hates. To the background belong, too, all subliminal phenomena. The brightness of the central area in experience must not lead us to take it for the whole man. "The instinctive part of our nature, in part conscious, in part unconscious, is ultimately the dominating factor in our lives and the source of most of our real ideals." It is 'the immense and vital importance of our instinctive life as manifested in the feeling background and as seen particularly in the religious consciousness' which our author declares to be the one contention for which he wishes the book to stand (p. 28). With most psychologists (*e. g.*, Wundt, Baldwin) the distinction between focal and marginal experiences is not one of kind, but only of degree of attention. The same thing may be now marginal, now focal. The sound of the wind as I sit writing is marginal until I turn attention to it, and then it becomes focal. In James's recognition of the substantive and transitive parts of experience, the object and its fringe of relations, we find the qualitative distinction implicit. Professor Pratt is, I believe,

the first to make this distinction explicitly one of kind. One is reminded of Royce's 'description' and 'appreciation,' but while Royce's distinction is epistemological, Pratt's is psychological.

With this description of psychic elements established, the author goes on to determine the nature and kinds of belief. "Belief," he says, "may be briefly defined as the mental attitude of assent to the reality of a given object." He thus includes under belief what Baldwin calls the reality-feeling. Three types of belief are distinguishable—primitive credulity (both in matters of sense perception and in the naïve acceptance of what is told us by others), intellectual belief and emotional belief. These three kinds of belief as concerned with man's faith in the divine have produced respectively the 'religion of primitive credulity,' the 'religion of thought' and the 'religion of feeling.'

In the second part of his book the author traces the development of religious belief through these three stages in four of the historical religions—primitive animism, the religions of India and Israel, and Christianity. The survey is an interesting one. In each of the four religions examined we are shown convincing examples of the three types of belief, unless possibly one might question the evidences offered for the 'religion of thought' in animism. In Christianity, the 'religion of primitive credulity' is illustrated by the dominance of authority in the medieval church, the 'religion of feeling' by Christian mysticism, and the 'religion of thought' by eighteenth century rationalism in England. His examination of the attempts to base the belief in God on rational grounds leads him to the dilemma: "The arguments which the people can grasp are no longer tenable, while the arguments that are tenable—if such there be—the people can not grasp" (p. 194).

Part III. is a study of the present status of religious belief. Two of the four chapters, 'Types of Belief in Mature Life' and 'The Value of God,' are based on a questionnaire sent out by the author. This last-mentioned chapter is perhaps the most important contribution of the book to our knowledge of the religious consciousness. It shows, so far as can be judged from some seventy cases, the actual significance which the belief in God and the practise of prayer have for many people to-day. The answers to his questions point with unanimity to the conclusion that 'God is valued, not as an explanation of things and an assistance to the understanding, but rather as an immediate help in the practical and emotional life.' Our author's final conclusion is that the 'religion of authority' and the 'religion of thought' are both fast passing away. The one hope for the future is in the 'religion of feeling.' This type of belief rests not on the illumination of the center, but on the deeper, if dimmer, experiences of the background. "It is an outcome of the needs and demands of the organism, not of the reason. It has its roots deep in the field of vital feeling. . . . It is an attitude toward the universe; our reaction to the stimulus of the whole cosmos. This reflex is determined by no momentary reasoning of the individual. The whole line of his heredity, the whole of his conscious and unconscious personality, are involved

in it. . . . It is the feeling background that determines his belief, and this might be described as the reason and experience of the race become organic" (p. 294).

After reading such passages as this in which the roots of religion are so clearly traced to the vital depths of human nature, one is not prepared for the doubtful, almost pessimistic, turn in which the writer presents the outlook for the future of religion. He overestimates, I believe, the importance of the decline in the beliefs of authority and the beliefs of reason. The force of the imitative tendency and social contagion will determine belief for the majority in religion as in other matters, and in the future as in the past. The beliefs of the reason have never been really dynamic except in the minds of a very few. Their influence has been negative rather than positive. They have put a valuable check on the wild exuberance of the native religious growths. They influence theology much, religion little. Theology is the effort of the understanding to adjust the knowledge of the world to the religion of the heart. It must change as the knowledge of the world changes. But I can see no reason to doubt the permanence of the religious strain in human nature, founded, as it is, on vital needs and the great dominating background of organic and analyzable experiences.

The clear and simple style of the book, together with the note of earnestness and sincerity that pervades it, makes it a pleasure to read. It is a scholarly study of a psychological problem. It will be read with profit by many who have neither a psychological training nor scholarly interests. A carefully selected bibliography of the psychology of religion and an index add to the usefulness of the book for the purposes of the student.

F. C. FRENCH.

UNIVERSITY OF NEBRASKA.

The New Knowledge. ROBERT KENNEDY DUNCAN. New York: A. S. Barnes & Co. 1905. Pp. xviii + 263.

This book is one of the best and the most important of the recent contributions to that modern literature whose purpose is to unite again the realms of philosophy and of science. In language shorn of the technical terms usually used in such discussions there is presented to the lay reader a clear and vivid picture of those recent scientific investigations and speculations which are even now fast compelling us to change the older materialistic conceptions of science for others more suited to the requirements of present-day thought.

Beginning with a statement of some of the current conceptions of the nature of matter, ether and energy, Mr. Duncan proceeds to describe the manner in which the periodic law of atomic weights was established; and to explain its significance, its use, and the problems to which it gives rise. The following chapters deal with the investigations of the conduction of electricity by gases, and with the arguments that have led to the theories of ions and of corpuscles. The study of these chapters

can not fail to give the reader an insight into the marvelous ingenuity and resourcefulness of the modern man of science when confronted with a problem worthy of his mettle.

But the picture does not end here. The presentation of this outline of the experiments and inductive arguments which have led to the formation of the concepts of ions and of corpuscles is followed by a no less interesting discussion of the partial verification of these theories by the unexpected discovery of radium and of the other radioactive substances with their well-nigh magic properties. The veriest skeptic could hardly refrain, after grasping the meaning and the scope of the revelations here described, from being thrilled with a spark of that scientific enthusiasm—now much needed because almost extinct—which so filled Galileo when he first beheld the satellites of Jupiter that he fervently thanked God for permitting him to perceive such unsuspected marvels.

After describing the facts of radioactivity, the author discusses some of the conclusions that may be drawn from these facts; such as the possibility of the transmutation of the elements, atomic disintegration, interatomic energy, etc. It is here shown that the philosopher's stone of the medieval alchemist can no longer be regarded as the wild dream of an overvivid imagination, but that it may now lie within our reach. We also learn of the almost incredible amount of energy which is stored within the 'inwards' of everything about us, awaiting the magic touch of him who shall discover the yet secret process of harnessing it to do the work of man. Nor is this all; for we are assured that that valiant ideal of physical science—the discovery of the nature of matter—has been shattered beyond repair, since what has been considered to be matter turns out to be, in the light of the new knowledge, nothing but electricity after all! It is not, however, shown how this Sphynx's riddle is now nearer solution because of this illuminating discovery.

The last two sections of the book are devoted to a discussion of inorganic evolution and to the application of the new knowledge to old problems. In the first of these sections the evidence for a belief in both the evolution and the devolution of material worlds is presented. In the second, the theories derived from the new knowledge are applied to such problems as the origin of the heat of the sun, the nature of the aurora borealis and of comets' tails, etc. The investigations here presented are of great importance for two reasons. In the first place, they are shown to furnish data which may compel us to expand the idea of evolution to include the inorganic world; thus both opening the way for the possible discovery of a principle so general as to be competent to resume all our facts, both organic and inorganic, and giving to the physical sciences an opportunity to do their part in discovering the unity in this great world process. In the second place, these investigations tend to show that the universe is not, as the older physics would have us believe, necessarily running down and approaching a condition of temperature equilibrium in which no more energy would be available for the performance of useful work. Thus the new knowledge would convert scientific pessimism into

scientific optimism; and we have furnished us a mental picture of an eternity of matter, which picture will some day be found indispensable in assisting us to form rational conceptions of the eternity of spirit.

So this book by Mr. Duncan is a splendid contribution to present discussions, not only because the facts presented are so much stranger than fiction that they are driving us to recast our scientific and philosophic conceptions of the nature of things, but also because these same facts are presented to the reader so skillfully that they read as easily as fiction, and so will be read widely outside of technical circles.

The new knowledge is so new, that no one can be expected to accept without comment the author's definitions of science as redefined. Some may be so unkind as to think that the book would have been more useful if he had not yet attempted to crystallize his opinions in propositions which often mean nothing because of the lack of meaning of the terms employed. It seems, however, ungracious to pick minor flaws in a work that is so admirable a rendering of so difficult a theme. We heartily recommend the book to those who wish to get a capital résumé of the investigations and arguments that have led to these recent remarkable additions to physical knowledge. The physics of the book is sound, but we would warn the reader against accepting too readily the metaphysical suggestions put forth. New knowledge must inevitably in time lead to new conceptions, and it is still true that it is not wise to put new wine into old bottles.

C. R. MANN

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The Idealist and the Intuitionist. HELEN WODEHOUSE. *International Journal of Ethics*, January, 1907. Pp. 164-180.

"I am not going to write history. Intuitionism as it has appeared in the past does not concern me; it may be true that this has a close relation to idealism, and it has certainly been a good ally against naturalist schools. But certain views, lately put forward under the name, I believe are destined to be of considerable use to the coming generation, if only their upholders and the idealists will not try to adopt each other as allies (and complain of each other as bad ones)" (p. 165). Modern intuitionism as contrasted with idealism is thus the subject of the article, especially the intuitionism of Mr. Moore and of Professor Sidgwick.

Mr. Moore's intuitionism differs from idealism as to the significance of 'approval, the state of mind in which we judge a thing as good.' "Approval as such . . . is an element distinct from the whole world of our desires. We approve when, without reference to any want or need in ourselves, we recognize that this or that is absolutely good" (p. 166). Idealism, on the other hand, connects approval with human desire, human need, as something to be satisfied. Professor Sidgwick's intuitionism differs from idealism as to the significance of 'moral obligation.' While his 'good' agrees with that of the idealists, his 'ought' is rather intuitionistic. As Miss Wodehouse quotes him, "It seems to me, however,

more in accordance with common sense to recognize—as Butler does—that the calm desire for my ‘good on the whole’ is authoritative, and therefore carries with it implicitly a rational dictate to aim at this end” (p. 169). Idealism, on the other hand, connects ‘ought’ with ‘This is what is wanted.’

Miss Wodehouse shows clearly how a vague want may pass into an apparent imperative. “I notice that I want some things more permanently than others, some only as means; some I seem always to want at bottom; some other people agree with me in wanting. I gradually form the conception of something that remains good for me whatever I may seem to want at the moment, and again of something that is good for others as well as for myself. The limits become vague, and I easily pass into thinking (1) of something which essentially is good *whatever* I want, temporarily or permanently and at top or at bottom, (2) of something which is good *for* nobody in particular, good in itself” (p. 171). Idealism thus should base its doctrine on personal desire and satisfaction, while intuitionism should do without any such individual basis.

The author brings out a further point. There may be a want or need for a thing not a part of our individual experience, *e. g.*, any event to take place after death. Here such need may be said to be fulfilled, without being satisfied. We may then have ‘fulfillment without satisfaction.’ From this point of view approval may be defined as ‘the recognition or perception or feeling that a thing fulfills my need, or if actual, would fulfill it’ (p. 174). ‘Ought’ may be defined as a demand, as meaning ‘This would fulfill a need’ (p. 175).

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. March, 1907. *Sur l'imagination affective* (pp. 225–255): F. PILLON. — Starting from Ribot's establishment of the fundamental character of the affective life, the author sets out to show the presence of affective imagination in many psychic phenomena where its action is not usually noted. There is a brief historical and critical sketch which includes a criticism of James's theory of the emotions as taking an inseparable associate for the essence of the thing. Ribot's theory is applied to animal psychology, to ethics and to pedagogy. *Le mouvement logique* (pp. 256–288): A. LALANDE. — The author distinguishes six different types of logical theory: (1) logistic, (2) *a posteriori* or scientific analysis, (3) metaphysical, (4) genetic (*i. e.*, reformed evolutionism), (5) Aristotelian, (6) Kantian. Logical writings of R. P. Nugon, A. Wolf, A. T. Shearman, A. Pastore, B. Croce and G. Vailati are reviewed critically. The most interesting are Pastore's attempt to construct mechanical models of logical theorems and Croce's rejection of symbolic logic. The latter is an interesting mingling of a pragmatic doctrine of science and intellectual dogmatism in philosophy. *De l'esprit*

magique à l'esprit scientifique (Ier article) (pp. 289-305): J. SAGERET. — Through the study of the difference between the scientific mind and that of magic-working peoples, the author hopes to contribute to the solution of the problem, what is science. The history of magic shows that both savage magic and that of more highly developed peoples agree in the use of the two axioms, the part is equivalent to the whole and like acts on like. *Analyses et comptes rendus.* Pillon, *L'année philosophique*, 1905: JULES DELVAILLE. Petrucci, *Origine polyphylétique, homotypie et non-comparabilité directe des sociétés animales*: S. JANKELEVITCH. Houzé, *L'aryen et l'anthroposociologie*: S. JANKELEVITCH. Adikes, *Kant contra Haeckel*: Baumann, *Kant und Haeckel*: S. JANKELEVITCH. Binet, *Les révélations de l'écriture d'après un contrôle scientifique*: DE FURSAC. Kostyleff, *Les substituts de l'âme dans la philosophie moderne*: FR. P. Pillsbury, *L'attention* J. P. NAYRAC. Wodon, *Sur quelques erreurs de méthode dans l'étude de l'homme primitif*: S. JANKELEVITCH. Severac, *La secte russe des Hommes de Dieu*: H. DELACROIX. Dubray, *The Theory of Psychological Dispositions*: RIBOT. *Revue des périodiques étrangers.*

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Punnett, R. C. *Mendelism.* London: Macmillan & Co. 1907. Pp. vii + 84. 2s.

Sumner, William Graham. *Folkways: A Study of the Sociological Importance of Usages, Manners, Customs, Mores and Morals.* Boston: Ginn & Co. 1907. Pp. iv + 692.

NOTES AND NEWS

THOSE who are interested in the history of culture will not wish to overlook the 'Plea for the Study of the History of Medicine and Natural Science,' by Berthold Laufer, in *Science* for June 7; the paper was read before the American Anthropological Association, at the meeting of the American Association for the Advancement of Science, December 31, 1906. From it the following extracts are selected: "The main trend of the last century was naturalistic and economic to a marked degree; so much so, that the new methods discovered in natural science, and the vast progress resulting therefrom, seemed to foreshadow an entirely unpre-

cedented epoch in the history of science, and the generation of that age was only too eager to sever all links connecting it with the accomplishments of former ages. The inauguration of the twentieth century presents a somewhat contrary aspect. One of its primary tendencies has been towards a restoration of our lost connection with the eighteenth century and with earlier periods, resulting in a movement of such earnest and impressive character that we can not foretell at the present moment whether the eighteenth century will not, at some day not far off, seem nearer to us than the sober prose of the nineteenth." Among the agencies to promote the history of science, the writer mentions as most noteworthy "the journal *Zoologische Annalen*, founded in the interests of the history of zoology in 1904 by Max Braun, professor of zoology at the University of Königsberg, and the organization of the Deutsche Gesellschaft für Geschichte der Medizin und der Naturwissenschaften, in Hamburg, on September 25, 1901—a most active and industrious society, which, now under the able leadership of Professor Karl Sudhoff, of Leipzig, has thus far published six volumes of 'Mitteilungen zur Geschichte der Medizin und der Naturwissenschaften.' . . . The recent proposed action of the Berlin Academy of Sciences in regard to the publishing of a complete edition of the Greek medical authors may also be mentioned in this connection; and the new epoch-making researches on the life, personality and works of Theophrastus Paracelsus." The writer describes proposals in Europe to organize museums for these subjects, and continues: "I now venture to suggest that such a museum, representing the development of medicine, natural sciences and technics in their whole range, be established in this country, perhaps here in New York, which seems to be the most appropriate place for it; and I am under the strong impression that such an institution would be of wide and universal benefit to our public at large, and would contribute immensely towards the furtherance of science, both natural and historical, and also considerably aid the cause of anthropology. . . . The most obvious gain which could be derived from the carrying out of these suggestions would be closer affiliation and more intimate contact of all the sciences. In the pursuit of historical investigations, we are all on common ground, and the character of the subject necessitates mutual dependence and assistance. It logically leads to a plea for cooperation, through the efficiency of which many of our most important problems are awaiting their final solution."

MR. FREDERICK SODDY, in the course of his review (*Nature*, May 9) of Sir Oliver Lodge's work on electrons, makes the following observations on the whole subject of enthusiasm for *Urstoff*. "Without in the least wishing to minimize the importance of the part played by imagination and hypothesis in experimental science, the question may fairly be asked whether these persistent efforts to 'simplify' matter and reduce it to a single fundamental existence have a place in the legitimate thought of the present day or whether they are not a continually recurring phase of an apparently innate primitive mental aspiration, the origin of which is

to be sought, not in the phenomena themselves, but in the predilections of the human brain? The rule that where one conception suffices it is superfluous to use more than one, may be fully granted. But it is surely something of a mental luxury to believe that these ideas of the essential unity of matter, and its ultimate reducibility to a single type, which exist deep down in the most ancient mythologies, and may be said to form part of the common stock of original ways of thinking, have, as yet, any other than this foundation. . . . It is, of course, possible that with the even fuller knowledge of the future some such doctrine as a connection between what is mentally harmonious and what is physically true may transpire, and the doctrine find a legitimate place in the theories of pure physics. But for the present the supporters of the electronic theory of matter have to show that they have not allowed their enthusiasm to betray them into an attitude of mind which belongs rather to the past than to the future of scientific thought."

Nature for May 23 contains a brief account of a monument erected to Linnæus in the eighteenth century. The monument was not a public one, and consisted only of an inscription in marble—dedicated, probably, in 1778, the year of the naturalist's death. It owed its existence to the enthusiasm of Domenico Cirillo, the Neapolitan friend and correspondent of Linné, who had made the botanical garden of his private grounds the rallying point for Neapolitan scientific men. During the revolution of 1799, the mob destroyed Cirillo's house, gardens and collections, including the tablet to Linnæus, letters from Isaac Newton, and the famous herbarium of Ferrante Imperato, preserved since the sixteenth century.

AN American editorial board of the *Hibbert Journal* has been organized, with the following list of members: B. W. Bacon, of Yale University; E. B. Craighead, president of Tulane University; Samuel A. Elliot, president of the American Unitarian Association; G. H. Howison, of the University of California; C. J. Keyser, of Columbia University; A. O. Lovejoy, of Washington University; A. C. McGiffert and William Adams Brown, of the Union Theological Seminary; R. Heber Newton, of East Hampton, N. Y.; Josiah Royce, of Harvard University; George E. Vincent, of the University of Chicago, and R. S. Woodward, president of the Carnegie Institution. It is hoped that by the cooperation of the American board the studies to which the *Hibbert Journal* is devoted may be substantially promoted. The American editors begin their duties immediately.

MR. ROWLAND HAYNES, associate in philosophy at Chicago in 1906-7, has been appointed instructor in psychology at the University of Minnesota. The psychological laboratory of the University is to be reopened under the supervision of Professor Miner, who intends to make the experimental work bear upon problems in education.

DR. J. CARLETON BELL (Ph.D., Harvard), instructor in experimental psychology, Wellesley College, has been appointed to take charge of the new psychological laboratory in the Brooklyn Training School for Teachers.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE EXAGGERATION OF THE SOCIAL

SINCE Hegel developed his theory of the state, and Spencer his conception of the social organism, it has seemed that nothing is significant which is not 'social.' Morality has been resolved into 'social well-being,' the development of thought into a 'social process,' language has become a 'social institution,' while beauty and causality are 'social conceptions.' The result of all this is misleading in various ways, of which I shall here speak of two that are very common. I shall choose Professor Royce as my 'horrible example'—not because he is more open to criticism than many others, but because I happen to have read him last.

I. The first of these is to treat the social aspect as a peculiar aspect—as if it had laws of its own—where no peculiarity exists. In the chapter on 'The Social Aspect of the Higher Forms of Docility' in his 'Psychology,' Professor Royce shows how the development of language, of general ideas, of the processes of judgment and reasoning, and of self-consciousness, is due to social intercourse. I do not understand him to say that this is the sole factor, but clearly he treats it as a peculiar factor,—that is, as a special sort of process occurring under certain special conditions,—and he leaves it practically unrelated to any other factors in mental development.

Now, of course, among the factors of mental development, no one questions the importance, or even the conspicuous importance, of social relations. But whether this factor is in any way peculiar is another question. Suppose Robinson to have been a native of his island, and thus deprived from the beginning of social intercourse.¹ Still he would not have lacked the conditions for a mental development of the same kind, though of minor degree, as we now possess. In making use of the various natural objects—the *same* object at different times and for different purposes—he would be compelled to develop a language and a system of ideas. The contrast between his judgments about the same thing at different times and between his own mode of behavior and that even of the inanimate objects

¹ The abstract character of the supposition is no bar to the argument. This is the common form of scientific procedure.

would furnish a sufficient 'social' basis for reasoning. The same contrast would be effective in developing a consciousness of self—at least so far as self is distinguished from nature—while intercourse with his dog and his goats would inevitably develop some consciousness of individuality. In a word, then, the comparison of my own thoughts at different times furnishes precisely the same conditions of contrast and identity as the comparison of my own thought with my neighbor's, while the relations between myself and natural objects are, though far less intimate, precisely the same in kind as my relation to my neighbor.² The social conditions detailed by Professor Royce are therefore only a special case of the conditions of identity and contrast required for mental development generally. And in my opinion the emphasis placed upon the social aspect tends to obscure the essential feature of the process in question. For more fundamental than the social contrast is just the fact of contrast.

To choose another illustration—in his lecture on 'Physical and Social Reality' in 'The World and the Individual,' Professor Royce shows how the conception of nature as uniformly and mechanically causal is due to the necessities of social organization, a uniform nature being, of course, a necessary condition of cooperation. The uniformity of nature is thus a 'social conception.' But he fails to note that a uniform nature is equally a condition of isolated individual activity, and indeed of any adjustment of acts to ends, or of one act to another, whether individual or cooperative. The settler in the wilderness can no more dispense with a uniform nature than can the management of a railway. Hence, from this pragmatic standpoint, the uniformity of nature is simply a universal condition of practical activity. In other words, causality as a category is more broadly *practical* than 'social.' And here again I think that the emphasis upon the social, in suppressing the more universal character, is so far misleading.

We have all heard the vague statement that 'all morality is social' and we are familiar with the point of view which reduces all vice to selfishness. This means, of course, that morality lies always between individuals and never within the individual. According to this view, Robinson on his island would be beyond the range of moral judgment, since he would be deprived of the delicious possibility of 'doing good to others.' What such a view amounts to is simply a false way of stating the now generally adopted utilitarian principle that any particular good is to be estimated in relation to other goods, which may be my own or my neighbor's. And here,

² As shown, I think, by Professor Royce in the lecture on 'The Interpretation of Nature' in the Second Series of 'The World and the Individual.'

once more, the emphasis upon the 'social' tends to obscure a more fundamental character. For the essential feature of moral action is simply that of acting from a point of view broader than the present, *i. e.*, it must be in some degree *objective*. This objective standpoint will consider my own future good as well as the good of others. It will be in some degree moral if it never reaches others.

II. A second misuse of the social category (not unrelated to the first) might be called, after a phrase of Professor James, 'the sociologist's fallacy.' It consists in the confusion of a point of view in which 'individual' and 'social' are distinct and correlative with a point of view prior to such distinction and in using the term 'social' to apply indifferently to either. What is not-individual is arbitrarily called 'social' whether the term marks a distinction or the absence of a distinction.

The point is well illustrated in the now popular tendency to regard the individual as the product of society,—or as a differentiation, and possibly an evil differentiation, from an original social unity. Historically this may be regarded as a reaction from the individualistic theories of the eighteenth century, which conceived the individual as a self-contained and complete reality anterior to the organization of society. When now it was seen that the individual could not be defined apart from society, what was more natural than to say that if society is not the product of the individual the individual must be the product of society? And yet if the individual can not be defined apart from society, neither can society be defined apart from the individual. It is therefore a misnomer to describe as 'social' that condition of mankind which preceded (or which, relatively speaking, marked the primitive stages of) social organization, for it is just as much, and just as little, a state of individual independence. It is not even, strictly speaking, to be called 'gregarious,' for any consciousness of belonging to one group rather than another must involve some sense of individuality. The point is indeed a very simple one and has been frequently made clear: what is correlative can not also be prior; there can be no degree of social order without a corresponding degree of individual distinctness. Yet we hear daily of the individual as the product of the social order and only now and then of society as the product of the individuals composing it.

The priority of the social plays a conspicuous part in our 'social psychology.' Professor Royce gives utterance to it both in his 'Psychology' and, though merely casually, in his 'The World and the Individual.' Imitation, the social factor, precedes 'love of opposition,' the individual factor;³ and consciousness of others antedates conscious-

³ 'Outlines of Psychology,' p. 277.

ness of self,—or at least this is ‘nearer the truth’ than the reverse order.⁴ But if the child knows himself only in contrast with others, he must, I think, know others only in contrast with himself. Professor Royce says that “in order to contrast oneself with one’s social environment it is necessary, in general, *first* to learn how to do something that has social significance. I can not oppose you by my speech unless I *already* know how to talk. I can not rival you as a musician unless I *already* understand music. I can not endeavor to get the better of a political rival unless I *already* understand politics. But speech and music and politics have to be learned by imitation.”⁵ But (the italics are mine) why *first* and *already*? One might as well say that a triangle can not have three angles unless it *first* has three sides. Granted that the child has nothing of his own to say until he learns to talk, it is none the less true that he does not learn to talk until he has something of his own to say. Speech and music and politics are indeed developed by contact with social environment; they are none the less the products of an individual reaction, which, just so far as one understands, is also creative. And so of a long list of illustrations by which Royce shows that imitation precedes self-consciousness. Each is a case of the sociologist’s fallacy, by which a ‘not-before’ is translated into an ‘after’ and a correlative condition into a prior; and the whole is a reflection of the view that the individual is the product of the social order.

I have spoken of the misuse of the social category as if there were also a proper use for it. As a descriptive category which marks off a group of relations intimately concerned in mental development and a group of objects specially interesting to us, it is undoubtedly very serviceable. But as the basis of a scientific classification it has, so far as I can see, no validity whatever. The relations between the several factors of the individual self present, both for psychology and for ethics, the same conditions as those between the several individuals composing society. There are no social laws which are peculiarly and exclusively social.

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DISCUSSION

A WORD MORE ABOUT TRUTH

TO THE EDITORS OF THIS JOURNAL:

My failure in making converts to the conception of truth which I published in your number for March 14 of this year, seems, if I

⁴ ‘The World and the Individual,’ Second Series, p. 170, also p. 260 ff.

⁵ ‘Psychology,’ p. 278.

may judge by what I hear in conversation, almost complete. An ordinary philosopher would feel disheartened, and a common choleric sinner would curse God and die, after such a reception. But instead of taking counsel of despair, I make bold to assail your pages again, in the faint hope that repeated droppings may wear upon the stone, and that my statements may seem less obscure if surrounded by something more of a 'mass' whereby to apperceive them.

For fear of compromising other 'pragmatists,' whose'er they be, I will speak of the conception which I am trying to make intelligible, not as the pragmatist conception, but as my own conception. I first published it in the year 1885, in an article in *Mind* bearing the title of 'The Function of Cognition.' Essential theses of this article were independently supported in 1893 and 1895 by Professor D. S. Miller¹ and were repeated by me in a presidential address on 'The Knowing of Things Together'² in 1895. Professor Strong, in an article in this JOURNAL³ entitled 'A Naturalistic Theory of the Reference of Thought to Reality,' called our account 'the James-Miller theory of cognition,' and, as I understood him, gave it his adhesion. Yet, such is the difficulty of writing clearly in these penetralia of philosophy, that each of these revered colleagues informs me privately that the account of truth I now give—which to me is but that earlier statement more completely set forth—is to him inadequate, and seems to leave the gist of real cognition out. If such near friends disagree, what can I hope from remoter ones, and what from unfriendly critics?

Yet I feel so sure that the fault must lie in my lame forms of statement and not in my doctrine, that I beg you for more space in which to express myself. I shall probably not soon offend again in the interests of this particular subject of disputation!

I

Are there not some general distinctions which it may help us to agree about in advance? Professor Strong, in the manuscript of a forthcoming work with which he has recently favored me, distinguishes between what he calls 'saltatory' and what he calls 'ambulatory' relations. 'Difference,' for example, is saltatory, jumping as it were immediately from one term to another, but 'distance' in time or space is made out of intervening parts of experience through which we ambulate in succession. Years ago, when T. H. Green's ideas were most influential, I was much troubled by his criticisms of

¹ *Philosophical Review*, Vol. II., p. 408, and *Psychological Review*, Vol. II., p. 533.

² *Psychological Review*, Vol. II., p. 105.

³ Vol. I., p. 253.

English sensationalism. One of his disciples in particular would always say to me, "Yes! *terms* may indeed be possibly sensational in origin; but *relations*, what are they but pure acts of the intellect coming upon the sensations from above, and of a higher nature?" I well remember the sudden relief it gave me to perceive one day that *space* relations at any rate were homogeneous with the terms between which they mediated. The terms were spaces, and the relations were only other intervening spaces.⁴ For the Greenites space relations had been saltatory, for me they became thenceforward ambulatory.

Now the most general way of contrasting my view of knowledge with the popular view (which is also the view of most epistemologists) is to call my view ambulatory, and the other view saltatory; and the most general way of characterizing the two views is by saying that my view describes knowing as it exists concretely, while the other view only describes its results abstractly taken.

I fear that most of my recalcitrant readers (Professor Russell,⁵ for example) fail to recognize that what is ambulatory in the concrete may easily be taken so abstractly as to appear saltatory. Distance, for example, is made abstract by emptying out whatever is particular in the concrete intervals—it is reduced thus to a sole 'difference,' a difference of 'place,' which is a logical or saltatory distinction, a so-called 'pure relation.'

The same is true of the relation called 'knowing,' which may connect an idea with a reality. My own account of this relation is ambulatory through and through. We know, I say, an object by means of an idea, whenever we ambulate towards the object with the clue in our hand which the idea gives us. If we believe in common sense, in so-called 'sensible' realities, the idea may not only lead us towards its object, but may put the latter into our very hand, make it our immediate sensation. But, if, as most reflective people opine, sensible realities are not true realities, but only their appearances, our idea brings us at least so far, puts us in touch with reality's most authentic substitutes and representatives. In any case our idea brings us into the object's neighborhood, practical or ideal, gets us into commerce with it, helps us to its closer acquaintance, enables us to foresee it, class it, compare it, deduce it,—in short, to deal with it as we could not were the idea not in our possession.

The idea is thus, when functionally considered, an instrument for enabling us the better to *have to do* with the object and to act about it. But it and the object are both of them bits of the general sheet and tissue of reality at large; and when we say that the idea leads us towards the object, that only means that it carries us forward through

⁴ See my 'Principles of Psychology,' Vol. II., pp. 148–153.

⁵ See this JOURNAL, Vol. IV., p. 292 f.

intervening tracts of that reality into the object's closer neighborhood, into the midst of its associates at least, be these associates its physical neighbors, or be they its logical congeners only. Thus carried into closer quarters, we are in a better situation as regards acquaintance and conduct; and we say that through the idea we now *know* the object better or more truly.

My thesis is that the knowing here is *made* by the ambulation through the intervening experiences. If the idea led us nowhere, or *from* that object instead of towards it, could we talk at all of its having any cognitive quality? But it is only when taken in conjunction with the intermediate experiences that it gets related to *that particular object* rather than to any other part of nature. Those intermediaries determine what particular knowing function it exerts. The terminus they guide or point to tells us what it 'means,' the results they yield us 'verify' or 'refute' it. Intervening experiences are thus as indispensable foundations for a concrete relation of cognition as intervening space is for a relation of distance. Cognition, whenever we take it concretely, means determinate 'ambulation,' through intermediaries, from a *terminus a quo* to or towards a *terminus ad quem*. As the intermediaries are other than the termini, and connected with them by the usual associative bonds (be these 'external' or be they logical, *i. e.*, classificatory, in character), there would appear to be nothing especially unique about the processes of knowing. They fall wholly within experience; and we need use, in describing them, no other categories than those which we employ in describing other natural processes.

But there exist no processes which we can not also consider abstractly, eviscerating them down to their essential skeletons or outlines; and when we have treated the processes of knowing thus, we are easily led to regard them as something altogether unparalleled in nature. For we first empty idea, object and intermediaries of all their particularities in order to retain only a general scheme, and then we consider the latter only in its function of giving a result, and not in its character of being a process. In this treatment the intermediaries shrivel into the form of a mere space of separation, while the idea and object retain only the logical distinctness of being the end-terms that are separated. In other words, the intermediaries which in their concrete particularity form a bridge, evaporate ideally into an empty interval to cross, and then, the relation of the end-terms being now saltatory, the whole hocus-pocus of *Erkenntniss-theorie* begins, and goes on unrestrained by further concrete considerations. The idea, in 'meaning' an object separated by an 'epistemological chasm' from itself, now executes a *salto mortale*; in

knowing the object's nature, it now 'transcends' its own. The object in turn becomes 'present' where it is really absent, etc.; until a scheme remains upon our hands, the paradoxes of which some of us think that nothing short of an 'absolute' can overcome.

The relation between idea and object, thus made into a saltatory one, is thenceforward opposed, as being more essential and previous, to its own ambulatory self, and our more concrete ambulatory description is branded as either false or insufficient. The bridge of intermediaries, actual or possible, which in every real case is what carries and explains the knowing, gets treated as an episodic complication, which need not even *potentially* be there. I believe that this vulgar fallacy of opposing abstractions to the concretes from which they are abstracted, is the main reason why my account of knowing is deemed so unsatisfactory, and I will therefore say a word more on that general point.

Any vehicle of conjunction, if *all* its particularities are abstracted from it, will leave us with nothing on our hands but the original disjunction which it bridged over. But to escape treating the resultant self-contradiction as an achievement of dialectical profundity all we need is to restore some part, no matter how small, of what we have taken away. In the case of the epistemological chasm the first reasonable step is to remember that the chasm was filled with *some* empirical material, whether ideas or sensations, which performed *some* bridging function and saved us from the mortal leap. Restoring thus the indispensable modicum of reality to the matter of our discussion, we find our abstract treatment genuinely useful. We escape entanglement with special cases without at the same time falling into gratuitous paradoxes. We can now describe the general features of cognition, tell what on the whole it *does for us*, in a universal way.

We must remember that this whole inquiry into knowing grows up on a reflective level. In any real moment of knowing, what we are thinking of is our object, not the way in which we ourselves are momentarily knowing it. We at this moment, as it happens, have knowing itself for our object; but I think that the reader will agree that his present knowing of that object is included only abstractly, and by anticipation, in the results he may reach. What he actually keeps before his mind, as he reasons, is some supposed objective instance of knowing, as he conceives it to go on in some other person, or recalls it from his own past. As such, he, the critic, sees it to contain both an idea, an object, and processes by which the knower is guided from the one towards the other. He sees that the idea is remote from the object, and that, whether through intermediaries

or not, it genuinely *has to do* with it. He sees that it thus works beyond its immediate being, and lays hold of a remote reality; it jumps across, transcends itself. It does all this by extraneous aid, to be sure, but when the aid has come, it *has* done it and the result is secure. Why not talk of results by themselves, then, without considering means? Why not treat the idea as simply grasping or intuiting the reality, of its having that faculty *schlechthin*, of its shooting over nature behind the scenes, as it were, of its knowing things immediately and directly? Why need we always lug in the bridging?—it only retards our discourse to do so.

Such abstract talk about cognition's results is surely convenient; and it is surely as legitimate as it is convenient, *so long as we don't forget what it ignores, or positively deny it*. We may on occasion say that our idea meant *always* that particular object, that it led us there because it was *of* it intrinsically and essentially. We may insist that its verification follows upon that original cognitive virtue in it—and all the rest—and we shall do no harm so long as we know that these are only short cuts in our thinking. They are positively true accounts of fact *as far as they go*, only they leave vast tracts of fact out of the account, tracts of fact that have to be reinstated to make the accounts literally true of any real case. But if, not merely passively ignoring the intermediaries, you actively deny them to be even potential requisites for the results you are so struck by, your epistemology goes to irremediable smash. You are as far off the track as an historian would be, if, lost in admiration of Napoleon's personal power, he were to ignore his marshals and his armies and were to accuse you of error in describing his conquests as effected by their means. Of such abstractness and one-sidedness I accuse most of the critics of my own account.

In the second lecture of my recent little book entitled 'Pragmatism,' I used for a certain purpose the illustration of a squirrel scrambling round a tree-trunk to keep out of sight of a pursuing man: both go round the tree, but does the man go round the squirrel? It all depends, I said, on what you mean by 'going round.' In one sense of the word the man 'goes round,' in another sense he does not. I settled the dispute by pragmatically distinguishing the senses. But I told how some disputants had called my distinction a shuffling evasion and taken their stand on what they called 'plain honest English going round.'

In such a simple case few people would object to letting the term in dispute be translated into its concreter equivalents. But in the case of a complex function like our knowing they act differently. I give full concrete practical value for the idea of knowing in every

case I can think of, yet my critics insist that 'plain honest English knowing' is left out of my account. They write as if the minus were on my side and the plus on theirs.

The essence of the matter for me is that although knowing can be both abstractly and concretely described, and although the abstract descriptions are often useful enough, yet they are all sucked up and absorbed without residuum into the concreter ones, and contain nothing of an essentially other or higher nature that the concrete descriptions can be accused of leaving behind. Knowing is just a natural process like any other. There is no ambulatory process whatsoever, the results of which we may not describe, if we prefer to, in saltatory terms, or represent in static formulation. Suppose, *e.g.*, that we say a man is 'prudent.' Concretely, that means that he takes out insurance, hedges in betting, looks before he leaps. Do such acts *constitute* the prudence? *are* they the man qua prudent? Or is the prudence something by itself and independent of them? As a constant habit in him, a permanent tone of character, it is convenient to call him prudent in abstraction from any one of his acts, prudent in general and without specification, and to say the acts follow from the preexisting prudence. But would he be prudent in the absence of each and all of the acts? Surely we have no right to oppose static essences in this way to the moving processes in which they live embedded.

My bedroom is above my library. Does the 'aboveness' here mean aught that is different from the concrete spaces through which I have to move in getting from the one to the other? It means, you may say, a pure topographic relation, a sort of architect's plan among the eternal essences. But that is not the *real* aboveness, it is only an abbreviated substitute that on occasion may lead my mind towards truer, *i. e.*, fuller, dealings with the real aboveness. It is not an aboveness *ante rem*, it is a *post rem* extract from the aboveness *in rebus*. We may indeed talk, for certain conveniences, as if the abstract scheme preceded, we may say 'I must go up stairs because of the essential aboveness,' just as we may say that the man 'does prudent acts because of his ingrained prudence,' or that our ideas 'lead us truly because of their intrinsic truth.' But this should not debar us on other occasions from using completer forms of description. A concrete matter of fact always remains identical under any form of description, as when we say of a line, now that it runs from left to right, and now that it runs from right to left. These are but names of one and the same fact, one more expedient to use at one time, one at another. The full facts of cognition, whatever be the way in which we talk about them, even when we talk most

abstractly, stand inalterably given in the actualities and possibilities of the experience-continuum.⁶ But my critics treat my own more concrete talk as if *it* were the kind that sinned by its inadequacy, and as if the continuum left something out.

A favorite way of opposing the more abstract to the more concrete account is to accuse those who favor the latter of 'confounding psychology with logic.' Our critics say that when we are asked what truth *means*, we reply by telling only how it is *arrived-at*. But since a meaning is a logical relation, static, independent of time, how can it possibly be identified, they say, with any concrete man's experience, perishing as this does at the instant of its production? This, indeed, sounds profound, but I challenge the profundity. I defy any one to show any difference between logic and psychology here. The logical relation stands to the psychological relation between idea and object only as saltatory abstractness stands to ambulatory concreteness. Both relations need a psychological vehicle; and the 'logical' one is simply the 'psychological' one disemboweled of its fullness, and reduced to a bare scheme.

A while ago a prisoner, on being released, tried to assassinate the judge who had sentenced him. He had apparently succeeded in conceiving the judge timelessly, had reduced him to a bare logical meaning, that of being his 'enemy and persecutor,' by stripping off all the concrete conditions (as jury's verdict, official obligation, absence of personal spite, possibly sympathy) that gave its full psychological character to the sentence as a particular act in time. Truly the sentence *was* inimical to the culprit; but which idea of it is the truer one, that bare logical definition of it, or its full psychological specification? The antipragmatists ought in consistency to stand up for the criminal's view of the case, treat the judge as the latter's logical enemy, and bar out extenuating conditions as so much inessential psychological stuff.

II

Still another obstacle, I suspect, stands in the way of my account's acceptance. Like Dewey and like Schiller, I have had to say that the truth of an idea is determined by its satisfactoriness. But satisfactoriness is a subjective term, just as idea is; and truth is generally regarded as 'objective.' Readers who admit that satisfactoriness is our only *mark* of truth, the only sign to us that we have the precious article, will still say that the objective relation

⁶ The ultimate object or terminus of a cognitive process may in certain instances lie beyond the direct experience of the particular cognizer, but it, of course, must exist as part of the total universe of cognition whose constitution the critic is discussing.

between idea and object which the word truth points to is left out of my account altogether. I fear also that the association of my poor name with the 'Will to Believe' (which 'Will,' it seems to me, ought to play no part in this discussion) works against my credit in some quarters. I fornicate with that unclean thing, my adversaries may think, whereas your genuine truth-lover must discourse in Huxleyan heroics, and feel as if truth ought to bring eventual messages of death to all our satisfactions. Such divergences certainly prove the complexity of the area of our discussion; but to my mind they also are based on misunderstandings, which (though with but little hope of success) I will try to diminish by a further word of explanation.

First, I will ask my objectors to define exactly what *sort* of thing it is they have in mind when they speak of a truth that shall be absolute, complete and objective; and then I will defy them to show me any conceivable standing-room for such a kind of truth outside the terms of my own description. It will fall, as I contend, entirely within the field of my analysis.

To begin with, it must obtain between an idea and a reality that is the idea's object; and, as a predicate, it must apply to the idea and not to the object, for objective realities are not *true*, at least not in the problematic universe of discourse to which we are now confining ourselves, for there they are taken as simply *being*, while the ideas are true *of them*. But we can suppose a series of ideas to be successively more and more true of the same object, and can ask what is the maximum approach to being absolutely true that the last idea might attain to.

The maximal conceivable truth in an idea would seem to be that it should lead to an actual merging of ourselves with the object, to an utter mutual confluence and identification. On the common-sense level of belief this is what is supposed really to take place in sense perception. My idea of this pen verifies itself through my percept; and my percept is held to *be* the pen for the time being—percepts and physical realities being treated by common sense as identical. But the physiology of the senses has criticized common sense out of court, and the pen 'in itself' is now believed to lie beyond my momentary percept. Yet the notion once suggested, of what a completely consummated acquaintance with a reality might be like, remains over to our speculation. *Total conflux of the mind with the reality* would be the absolute limit of truth, there could be no better or more satisfying knowledge.

Such total conflux, it is needless to say, is *already explicitly provided for in my account of the subject*. If an idea should ever lead

us not only *towards*, or *up to*, or *against*, a reality, but so close that we and the reality should *melt together*, it would be made absolutely true, according to me, by that performance.

In point of fact philosophers doubt that this ever occurs. What happens, they think, is only that we get nearer and nearer to realities, we approximate more and more to the all-satisfying limit; and the definition of actually, as distinguished from imaginably, complete and objective truth, can then only be that it belongs to the idea that will lead us as *close up against the object* as in the nature of our experience is possible, literally *next* to it, for instance.

Suppose, now, there were an idea that did this for a certain objective reality. Suppose that no further approach were possible, that nothing lay between, that the next step would carry us right *into* the reality; then that idea would be true in the maximal degree that might be supposed practically attainable in the world which we inhabit.

Well, I need hardly explain that *that degree of truth is also provided for in my account of the matter*. And if satisfactions are the marks of truth's presence, we may add that any less true substitute for such a true idea would prove less satisfactory. Following its lead, we should be left farther from the terminus. We should discern a gap, desiderate a closer approach, and not rest till we had found it.

I am, of course, postulating here a standing reality independent of the idea that knows it. I am also postulating that satisfactions grow *pari passu* with our approximation to such reality.⁷ If my critics challenge this latter assumption, I retort upon them with the former. Their whole notion of a standing reality grows up in the form of an ideal limit to the series of successive termini to which our thoughts have led us and still are leading us. Each terminus proves provisional by leaving us unsatisfied. The truer idea is the one that pushes farther; so we are ever beckoned on by the ideal notion of an ultimate completely satisfactory terminus. I, for one, obey and accept that notion. I can conceive no other objective *content* to the notion of truth than that of approximation to such a terminus, nor can I conceive that the notion would ever have grown up, or that true ideas would ever have been sorted out from false or idle ones, save for the greater sum of satisfactions, intellectual or practical, which the truer ones brought with them. Can we imagine a man absolutely satisfied with an idea and with all its relations to

⁷ Say, if you prefer to, that *dissatisfactions* decrease *pari passu* with such approximation. The approximation may be of any kind assignable—approximation in time or in space, or approximation in kind, which in common speech means 'copying.'

his own ideas and to his sensible experiences, and who should yet *not* take its content as a true account of reality? The *matter* of the true is thus absolutely identical with the matter of the satisfactory. You may put either word first in your ways of talking; but leave out that whole notion of *satisfactory leading* (which is the essence of my pragmatistic account) and call truth a static logical relation, independent even of *possible* leadings or satisfactions, and it seems to me you cut all ground from under you.

I fear that I am still very obscure. But I respectfully implore those who reject my doctrine because they can make nothing of my stumbling language, to tell us in their own name—*und zwar* very concretely and articulately!—just how the real, genuine and absolutely 'objective' truth which they believe in so profoundly, is constituted and established. They mustn't point to the 'reality' itself, for truth is only our subjective relation to realities. What is the nominal essence of this relation, its definition, whether or not it be 'objectively' attainable by mortals?

Whatever they may say it is, I have the firmest faith that my account will prove to have allowed for it and included it by anticipation, as one possible case in the total mixture of cases. There is, in short, no *room* for any grade or sort of truth outside of the framework of the pragmatic system, outside of that jungle of empirical leading and their nearer or ulterior terminations, of which I seem to have written so unskillfully.

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REVIEWS AND ABSTRACTS OF LITERATURE

*Contemporary Criticism of Friedrich Nietzsche.*¹

It is almost impossible to get an unbiased opinion of Nietzsche. A recent and valuable article by Professor Raoul Richter in the supplement to the Munich *Allgemeine Zeitung*² gives a very sympathetic study of the philosopher. From another point of view, Professor D. Julius Kaftan has written an essay entitled 'Aus der Werkstatt des Uebersmenschen.' This has the date 1906. In a book by Emil Mauerhof, 1907, there is a study of considerably over two hundred pages with the title 'Was also sprach Zarathustra?' which is as pessimistic as Professor Richter's article is enthusiastic.

Professor Richter deals with Nietzsche chiefly as a constructive thinker. The prevailing fashion has been to consider the philosopher

¹ A review of Richter's 'Friedrich Nietzsche und die Kultur unserer Zeit,' Kaftan's 'Aus der Werkstatt des Uebersmenschen' and Mauerhof's 'Was also sprach Zarathustra?'

² No. 223, 1906.

almost solely as an intellectual anarchist, and as having contributed very little that is positive. Richter does not accept this point of view. After dealing in a general way with his relation to art and literature, with the more or less fashionable vogue that he is at present enjoying, with his effect upon contemporary German taste, the critic divides his essay into three parts.

First, Nietzsche's relation to religion. Richter is very much put to it to make of his hero anything but a destructive power in the field of religion, but he attacks his task bravely. He passes lightly over such a book as his 'Antichrist' and over the blasphemous title of his unpublished autobiography, 'Ecce Homo!' He claims that Nietzsche's annihilating criticisms of Christianity were merely attempts to clear the ground for purer spiritual conceptions, that he was a remarkably religious individual and, finally, that the influence of his work and of his personality is only now beginning to bear fruit.

The essayist claims that the substance of religion has nothing to do with dogmas nor with an historical church, but that it is an inner spiritual condition. Nietzsche makes man's religious aspirations entirely independent of the theories of the church—even independent of a Deity. In all this discussion Richter is compelled to take refuge behind philosophical phrases which seem very pregnant, but which really have little significance. Having explained and attempted to justify the formlessness of Nietzsche's beliefs, he considers the question of the content of his religious principles. Nietzsche denies that this world is the well-planned work of a Creator. According to him, it is a tremendous play of forces which recur from eternity to eternity. The whole inorganic nature, earth, air, water, sun and moon, as well as plants, animals and man, is an embodiment of the 'will for power' (*der Wille zur Macht*), and the world process consists in the eternal struggle of individual wills. The man of to-day does not represent the highest point in the organization of nature. Beyond him are possible higher forms—supermen. Instead of a Deity, Nietzsche sets up life as something to be worshipped and glorified. 'That force and fullness increase in the world, that we consciously do that towards which unconsciously everything drives us,' is one of the chief principles of his creed.

Richter thinks that there is a large body of thoughtful men who for a long time have desired just such ethical principles to guide their lives as the philosopher supplies. He finds that there is a general revolution against dogmas, and that Nietzsche's teachings are helping to supply the place made vacant by this upheaval, and further, that one of the greatest achievements of the philosopher consists in his having awakened slumbering religious forces which have been dormant in the skeptical and indifferent. He believes that Nietzsche has revealed to us the possibility of a religion without any of the ideas usually connected with churchly doctrines. He has preached faith, dealing solely with life this side the grave, and has exalted existence in this world in that he has shown the pernicious effects of the church in laying the emphasis upon the rewards

of a future life instead of valuing and improving and developing the present. Nietzsche has given back to the world its good conscience in that he has taken away from us the fear of punishment. In other words, the philosopher supplies something that is in perfect consonance with the demands of the modern man. His beliefs are no longer the gropings of elementary religious instincts, but just as the church has been necessary for the preliminary stages of development, so some such teachings as Nietzsche supplies are needed by the mentally full-grown man of to-day.

The second part of Richter's essay deals with the philosopher's attitude towards ethics. The most common expression used in connection with this phase of Nietzsche's work is his 'unmorality.' He is neither moral nor immoral. Such expressions as 'Beyond Good and Evil,' 'The Twilight of the False Gods or How One Philosophizes with the Hammer' indicate the philosopher's position with regard to traditional ethical ideas. According to him, nothing in itself is good or bad, but only with respect to a will which strives for it or abhors it. But this is not the divine will, nor a transcendental will, nor a higher nature within us. Good is everything which our earthly will desires, evil that which it detests. The highest good is that which we most devotedly strive for; the greatest evil that which we most deeply abhor. The chief principle in Nietzsche's system of morals consists in maintaining and strengthening a lasting will within us in opposition to momentary impulses. There arises a conflict where the permanent will dictates something which the momentary impulse or momentary will objects to. Nietzsche substitutes this permanent will for the traditional ideas of duty, and where it is overridden by a passing mood we have an emotion which is substantially the same as the usually accepted ideas of guilt and sin. Repentance is the feeling aroused when our permanent will is defeated. Nietzsche's idea of contrition differs from the traditional conception in that it is not caused by the breaking of foreign commandments imposed by laws of church or state, but rather by the infraction of laws which we have imposed upon ourselves, and the feeling that we must carry through the dictates of the permanent will is not our sense of responsibility towards a Deity or any human being, but our obligation to ourselves. Moral and good is this discipline of the will; immoral and evil is its opposite.

The final aim and object of Nietzsche's will is the furthering of life, the increase of strength and fullness in our existence. This explains his nihilistic attitude towards the existing faiths of Christianity and Buddhism. They are destructive, they are misleading, they underestimate the value of life in the same way that Schopenhauer's pessimism is negative. Nietzsche's list of virtues is directly the opposite of those taught by Christianity, Buddhism and Schopenhauer.

Richter is at some pains to explain why the radical views of Nietzsche will not produce moral anarchy by doing away with all laws except those dictated by the individual. He has a difficult problem before him, but he claims that the burden of such freedom weighs far more heavily than

the commands of conventional morality. It is far simpler to follow the rules of others if one can be persuaded that they are right than it is to formulate one's own standards. Now, according to Nietzsche, it is a question not of reading in books what I shall do, but rather to find out in the unwritten book of my own consciousness what I *will*. For this purpose we need the deepest introspection and self-knowledge, and having gained this, it is a severe responsibility to live up to the self-appointed task which lies within us, and to overcome the opposing conditions of existence which surround us. Richter concludes his discussion by the statements that we may not stop with Nietzsche, but we must progress through him to higher and greater ethical ideals; that Nietzsche is the forerunner of the religion and morality of the future. The critic acknowledges that in the detailed development of his theory of morals the philosopher has frequently erred, but it is the fate of many great ideas that they must first appear in an exaggerated form in order to attract the attention of the world. Having done this, time and circumstance may chasten and correct the distortion.

Richter's final division has to do with Nietzsche's significance in the field of art. He finds that the chief esthetic problem of the philosopher was concerned not with the essence of art, but with its value. He has much to say about the kind of art that denies life, that is without substance and without will. Naturally, much that Nietzsche has written on this subject deals with the principles of Wagner, in whose works he finds the most dangerous and at the same time the most attractive embodiment of Schopenhauer's theory of resignation. Richter does not concern himself with the different phases of Nietzsche's relations with Wagner. He treats the philosopher merely in the highest, or rather the latest, stage of his development.

The really important side of Nietzsche's artistic achievement has to do rather with his direct influence upon individuals and upon the more general ideas of his time than with any special system of esthetics which he formulated or attempted to present. Much could be said about the effect of Nietzsche's personality and his theories upon contemporary artistic conceptions, but this is an extremely elusive subject and one which is not yet ripe for investigation because we are too near the period which has been affected. Nietzsche did not create new systems, but he did launch a kind of titanism, which has had a very broad sway in art.

It is unfortunate that Richter has not attempted a discussion of the influence of Nietzsche's own marvelous literary style upon his contemporaries. He mentions incidentally the names of Dehmel, Hofmannsthal and Hauptmann, but the reader might reasonably expect an ampler treatment. However, this, too, is a very elusive problem.

Kaftan, in the first part of his brochure, 'Aus der Werkstatt des Ueberschmenschen,' takes up the question of the lack of philosophical structure in Nietzsche's works. He says that as early as 1881 Nietzsche had in mind the preparation of a system of philosophy. This was announced on the cover of the first edition of the 'Beyond Good and Evil,' in 1886,

and it is claimed that all of Nietzsche's works from this time on had reference to the idea of a system. The second part of 'Beyond Good and Evil' is expressly called by Nietzsche a 'prelude' to 'A Philosophy of the Future.' This was to be parallel to 'Zarathustra,' without, however, its poetical character, but having a strictly philosophical and connected form. But Nietzsche was unable to complete this work. The studies he made for it which were extant were published in 1901 under the title 'Der Wille zur Macht, Versuch einer Umwerthung aller Werthe.' Kaftan states that a sketch of the work, dating from the year 1887, was found in Nietzsche's literary remains. The book as prepared by the editors is the result of much arrangement and careful collection of widely scattered material. Kaftan thinks that this posthumous work is the most important of all of Nietzsche's writings for an appreciation of the essence of his philosophy, and upon this he bases the criticism (sometimes quite destructive) which is found in the ensuing pages of his monograph. Unfortunately for his study, the foundation is not quite in order. He attacks Nietzsche for holding ideas which are studied, in many cases, out of their proper connection.

Nietzsche never had an opportunity to revise the work which his editors have published, and it is manifestly unfair on the part of Kaftan, or any other critic, to attempt an analysis of his philosophy with no basis more adequate than that of a book constructed after the author's death, out of stray notes and aphorisms. Of course, there are discrepancies, contradictions, obscurities, inaccuracies in the work written at different periods of his mental development, and it is a very simple thing for any critic to seize upon these obvious faults and to make of the great thinker a very sorry figure. Add to this the peculiarities of Nietzsche's life—his ill health, his immeasurable self-conceit, his fearful headaches and his final insanity, and it is patent that the task of the man who wishes to belittle the influence of the German reformer is a very easy one. It is unjust to attack Nietzsche as a philosopher when he never published a coherent and connected statement of his philosophical views, and it is equally unfair to assume that a posthumous work such as has already been described is a better basis for criticism than the several publications, divergent as they may be, of Nietzsche's lifetime. Here is where Kaftan makes the fundamental blunder, which vitiates much that he has to say later. He states that the present work affords a glance into Nietzsche's workshop, and permits us to see in definite outlines his philosophical structure. "I consider it doubtful," says he, "that the system would have gained through a perfection of form and style. The contrary seems to me the more probable." Further, "While Nietzsche was a master of style, he was not a master of every style, and his methods of presentation were ill suited to philosophical and systematic writing." He therefore implies that it is a fortunate thing, after all, that the philosopher did not prepare his own system, but that this was left for his more calm editors. These ideas are rather uncritical. Further, we have the inevitable reference to Nietzsche's health. Kaftan claims that as early as the middle

of the seventies Nietzsche began to fail, and on this account his writings assumed their peculiar character. He was unable to work for long periods, therefore he accustomed himself to the use of aphorisms. Also his style was too subjective for philosophical discourse. Kaftan, therefore, makes the remarkable statement, "If he had been able now in reality to work out his great work as it appeared to him, and had been able to glorify it with the splendor of his style, then probably clearness and coherence would have suffered. It is, however, different with the sketch as it lies before us. To be sure, it suffers from the deficiencies which are naturally attached to a sketch. However, what seem to be deficiencies have become on the other hand advantageous. We are now placed in a position of observing a system of Nietzsche."

Kaftan accepts in a modified form the usual division of Nietzsche's literary life into three periods. First, as a follower of Schopenhauer and friend of Wagner; second, as a positivist; third, the Zarathustra period. The last division is the most important from a philosophical and literary point of view. The least significant of the three divisions is the second. Frau Andreas, in fact, considers it merely an episode in the philosopher's life, while Kaftan makes the claim that we can speak of only one great change in Nietzsche's mental life, namely, the turning from pessimism to optimism. The so-called second period becomes lost in the third division.

According to the positivist, the real value of life consists in pure thought and perception. According to Nietzsche, the value of life lies in the will, 'the will for power,' which he announces as the only true and guiding principle. However, Nietzsche considered the ideas of his later period to have a scientific basis, and in this respect he remains a positivist. He aimed to be scientific according to his rather original conception of the word, although at all times he despised the scholarship which consists merely in the heaping up of knowledge. His attack in 'Zarathustra' upon this kind of learning constitutes one of its most famous passages.

Kaftan does not believe that his so-called second period had anything to do with his friendship with Rée. Nietzsche was not a metaphysician, and it was natural that the formal philosophical and ethical ideas of the English positivistic school were unable to hold him very long. He was interested in what might be described as more practical matters. The question of the religious, moral and esthetic life of man was uppermost in his mind. Very properly, Kaftan maintains that Nietzsche would have accomplished little had he followed in the path marked by the philosophers who had preceded him—if he had taken up their ideas and developed and expanded them.

It is one of the great things of Nietzsche's career that as his sufferings increased his optimism grew. As a young man he was a pessimist; when he was confronted by the terrible torture of his later life, he became the world's greatest optimist. Optimism is the key-note to the Zarathustra period. Man is to enjoy the actual world, and in order to see the universe

clearly he must be freed from the imaginary world of religion and metaphysics.

He finds the Christian and Buddhistic religions to be deceptive, and it is remarkable how extravagant is his hatred of these creeds. This, however, is merely one of the items in his attack upon everything which gives a false appearance to the real world. The second item is the prevailing idea of good and evil, and in this connection we have to mention one of the chief and most widely known phrases that are associated with the philosopher, namely, the expression *Herrenmoral*. This may be summed up in the expression 'might is right.' The lords of the earth must have different standards of morals from the weak. The usually accepted conceptions of ethics are then another misleading condition in our failure to see the world truthfully. Connected with religion and morality is philosophy. He finds it to be in league with religion and morality, and through this connection to have contributed also to our false vision of the world.

Nietzsche has no respect (that is to say, in his later period) for any system that does not glorify reality. The three forces, religion, morality and philosophy, have ruled long enough, but they are now bankrupt. The time is ripe for a more positive attitude towards our surrounding conditions. Decadence must come to an end, and progress, development, force, growth must take its place. Everything that thwarts this tendency, no matter how sacred it may have become through tradition and long usage, must be abandoned. There is a world of an entirely different character from that which we have known, but it can not be understood and enjoyed until the beclouding influences just mentioned have been annihilated. Nietzsche is the great nihilist, and at the same time in the rôle of Zarathustra he is the preacher of the glories of the new world, which he has made possible through his nihilism.

Kaftan now devotes a great deal of space to a rather hair-splitting and more or less dexterous discussion of the two kinds of worlds which have been mentioned. They might be described as the subjective world and the objective world. Naturally, Nietzsche's is the latter. The critic takes up the philosopher's dictum that the world is a sea of forces, and has no great difficulty in pointing out a number of inconsistencies. He finds that his ideas of the 'will for power,' of the superman, of the difference between the ethics of the lord and the ethics of the slave, do not harmonize with this representation of the world as a play of forces. He does not make his objections very clear, but it requires no great amount of dialectic power to discover that the leading motifs which Nietzsche enunciated in various periods of his life are not always logical. Kaftan insists, however, that Nietzsche must have a philosophical system, and having determined this quite against Nietzsche's own intentions, he derives a great deal of pleasure from destroying the fictitious fabric which he has created.

Nietzsche says himself, "We would not let ourselves be burnt at the stake for our opinions—but for this, namely, that we might hold them,

and might be allowed to change them." Indeed, according to him, immutable convictions are the foes of truth. Very properly, then, the writer in Heinze-Ueberweg's 'History of Philosophy' says (Vol. 4, p. 337), "One need not be surprised at contradictions with him. He need not want to form a system out of his views." This is the true attitude to assume, and the study of Kaftan is very much weakened by the point of view which he insists upon maintaining.

A final motif which Kaftan brings forward is Nietzsche's doctrine of the eternal recurrence.⁸ Unquestionably the philosopher attaches great importance to this conception, but he was unable to develop it and expound it with the fullness which he would have liked. It is, indeed, one of the principles which he maintains most passionately, but the glorification of the world which is eternally recurring does not always rhyme with the idea of an eternally growing and developing world which we must worship and enjoy.

Nietzsche was not a philosopher; he was rather a preacher. He considered his great mission to be that of a reformer, who was to set up new standards of conduct, to teach men how to live rather than to furnish them with new metaphysical plans. Our behavior towards our neighbors, our attitude towards right and wrong, were questions of great importance with him. He wished to offer practical wisdom in teaching mankind how to know and to enjoy the actual world. Accordingly, strength is the essence of life. 'The will for power' is the key to proper development. Upon this idea hangs the gospel of Zarathustra.

In many respects, Nietzsche goes to the verge of materialism, in that he strongly emphasizes the physical. Decadence marked a physical degeneration; 'the will for power' is conditioned to a greater or less degree by vital force. The superman is to be mentally emancipated, but he also is to be physically a superman.

Nietzsche believed that humanity at the present time is decadent, that it is controlled by decadent ideals and values. Having shown this, he pronounces the thesis that 'the will for power' is to be the real test of all correct estimates of good and evil. This is the magical property which he uses in the 'transformation of values.'

The expression 'aristocratic radicalism' should be mentioned in this connection. The true aristocrat is the man whose 'will for power' is triumphant; the slave is he whose 'will for power' is weak or dormant, and it is only through combinations of the weak slaves that they have been able to defeat the real aristocrats of the world, and bring about the decadent conditions which now exist in our life and culture. Democracy is, therefore, a doctrine of slaves, who join together to thwart the progress of the aristocrats who approach most closely to Nietzsche's superman. The growth of decadence has been gradual. History has shown how supermen have been overcome. The ideal barbarians,

⁸ This subject has been treated recently in an essay, 'Die Ewige Wiederkunft des Gleichen.' Dr. Petersen, *Beilage zur Münchener Allgemeine Zeitung*, Nummer 54 u. 55, 1907.

which the philosopher portrays, with their splendid health were able to maintain their mastery but a short time. The lords were dethroned, and gradually hordes of slaves came into control. The aristocratic rule of imperial Rome could not be maintained. The renaissance, with its heroic figures, was only an episode of short duration. The mighty Napoleon, Nietzsche's hero *par excellence*, was unable to stop the democratic course of the world.

Everywhere there has been a decline. It is now time for a steadfast preaching of a new gospel. Zarathustra, who not only brings new ideas, but creates new values, is to make an era; he can never gain a large number of disciples, for if he were surrounded by a great troupe this would be contrary to his aristocratic ideals. From the nature of the case the 'much-too-many' can not hope to attain to the high position of the lords of the earth, but through the preaching of the gospel of the superman, through the idea of natural selection, there will ultimately result a higher and a stronger race. We are not to love our fatherland, but we are to love the land of our children—the future of the race should be the goal of our ambition. The man of to-day is merely a bridge to the superman of the future. Properly speaking, then, the superman is the crowning stone in the whole fabric of Nietzsche's beliefs and teachings. He has nothing to do with philosophy, but he is the chief article in the creed which Zarathustra—Nietzsche—preaches with ecstasy.

Kaftan maintains that the superman is an addition, an unnecessary appendix, to the system of philosophy which he thrusts upon Nietzsche. He thinks that the philosopher departs widely from the teachings of science, which he claimed to follow, in creating the superman. As a matter of fact, it was just this scientific suggestion which was especially attractive to Nietzsche. He was captivated by such phrases as the 'survival of the fittest,' 'development of species,' etc., and was unquestionably brought into this course of thought by these very catchwords which were current. Kaftan, however, says, "The talk about the superman is the mere vamping of the imagination, and has nothing to do with science. More correctly expressed, no mentally sound man could think of propounding this as a result of science or as a deduction from its results."

The last division of Kaftan's paper begins with the question, "Is Nietzsche ripe for the history of philosophy?" He says we are, of course, forced to take him seriously because of his immense intellectual power, but as his system of philosophy has been demolished, the query is quite pertinent—"Does he belong in the company of philosophers?" In a previous chapter he has stated that Nietzsche is rather a preacher, but it is hardly likely that the history of theology will attempt to immortalize him, and as he will not be downed it would seem that philosophy must accept him. And it has done so, at first begrudgingly but more recently with great enthusiasm, as is evident from the very sympathetic and extensive treatment given in the 'History of Philosophy,' by Heinze-Ueberweg. So that, after all, Kaftan's inquiry whether Nietzsche belongs in the history of philosophy or not, is of very small moment. Nietzsche's creed may be

untenable; it may have no satisfactory foundation; but it has immense force, the force which appeals to clever as well as to shallow minds. And its strength consists especially in the glorification of the strong, free will. Independent personality is the highest value to be striven for. Because Nietzsche's system is not coherent and logical Kaftan can not agree with the philosopher in maintaining that Zarathustra's gospel begins a new era in the history of the world. But Kaftan, tired of his logical deductions, confesses that Nietzsche is already a great power; those who believe in him will never be turned aside through the most convincing proof of the logician, and those who are opposed to him do not need this sort of demonstration. Nietzsche, he thinks, can not have a future; everything, even the good, in his philosophy, is the product of a diseased mind, and everything is so exaggerated and pathologically perverted that the sane minds of the future will never be deluded. However this may be, there can be no doubt that much of the philosopher's mission has already been accomplished. His ideas have penetrated so deeply and so widely into German life and art and literature, that if all his work were blotted out he could not fail to have accomplished a great work.

The future may show that Nietzsche was not a sound thinker, that his ideas are pernicious, but it would be foolish to decry the great influence that they have had and are having. If his teachings are poisonous, the poison is already in the human system, and it will require many years of antidotes to counteract it. Kaftan himself says, "When the time is fulfilled, he will cease to be regarded as a prophet, and will be to all what he is to us who have never numbered ourselves among his adherents—an interesting phenomenon, a great poet, an inspired teacher, who has seen much in the world and taught others to see much." Nietzsche's saying in regard to Plato, that his system is refuted and dead, but the person behind it is irrefutable and can not be killed, applies to himself. However, Kaftan does not reckon him as a peer of Plato; still he is willing to give him a place among the minor prophets.

Kaftan takes exception to Frau Andreas's statement that Nietzsche was a religious genius, that everything but religion was secondary with him, and his misfortune was that he was unable to satisfy his intense religious need in the systems as they exist to-day. He, therefore, went so far as to deify himself, and the ecstatic exaltation which came therefrom ended in his madness. Kaftan is willing to accept this merely as the explanation of the mystical element in his teaching which was concerned with Zarathustra.

There are three ideas, the critic thinks, which explain Nietzsche's development. First, and above all, the transition from pessimism to optimism. This was the great event of his life, and it is especially important in view of the decreasing physical force of Nietzsche in proportion as his optimism increased. Kaftan finds this to be an element of moral greatness in the man who was opposed to all ideas of morality. It is indeed remarkable that Nietzsche's ideal of man seemed to be composed of many things which he did not possess himself. The superman was to be a superior

man physically. He was not to be subject to the mental and nervous tortures that had caused his creator to suffer so severely. Nietzsche's heroes were all men of action, while the philosopher's strength consisted in emotions, in ideas and in his abilities as an artist. Furthermore, his health precluded any practical ambitions. He was also a wanderer without fixed abode or profession; in short, he was the very opposite of many things that he most admired. On the other hand, his superman must also have some of the ideal qualities of Nietzsche. One of the philosopher's favorite words is the expression *instinktsicher*. This he employs in many connections to express the quality which the superman must have of accomplishing naturally and instinctively superhuman deeds. He must not only be a strong man physically, but his strength of mind and will shall be commensurate with his physical development.

The second point which Kaftan uses to explain Nietzsche's development is the unexampled egoism which animates him and everything he does. Nietzsche never made the slightest concession to popular demands; never made the smallest effort to win popularity. He considered himself so supremely superior as to feel assured that the world would eventually come to him.

The third is Nietzsche's relation to music. With this subject is very intimately connected the name of Wagner, who was of the very first importance in Nietzsche's mental and esthetic development. Kaftan is inclined to give a higher importance to the musical influence which surrounded the philosopher than is usually done. He considers that music indirectly affected not only the form of his writings, but also to some extent their substance. He even goes so far as to attempt a musical explanation of his doctrine of eternal recurrence.

Mauerhof's essay is done in an extremely shallow and flippant manner, and in such a way as to make it impossible to take the study seriously. There is a great amount of padding, so that the tangible results of his investigation might have been expressed in one fourth the space which he has employed. His first chapter is entitled 'Wagner und Nietzsche.' This promises much that is interesting and important, because Wagner means for Nietzsche a turning-point in every sense of the word, but there is little fulfillment. It is quite conceivable that many intelligent men should not approve of Nietzsche, should think his influence prejudicial to the best interests of morality and art, but no amount of vituperation and sarcasm will lessen the significance of his literary life.

The musician, Wagner, is a subject of almost as great contempt as the philosopher. Mauerhof says that we should get rid of the idea that Wagner is a dramatic poet; his literary efforts are so trivial as to remind us of the infancy of literature. There then follows a long dissection of some of Wagner's works. All this, however, is prefatory to the discussion of the inconsistencies which mark the personal relations of the musician and the philosopher. He quotes long passages written by Nietzsche at the time when he was still under the sway of the composer, and then passages illustrating what he considers to be Nietzsche's outrageous

change of front. This is a very hackneyed theme, and one that is especially attractive to the superficial critic. But there is little to be gained by continually bringing forward these inconsistencies. Let us at once accept the theory which is least favorable to the philosopher and agree that Nietzsche had outgrown the tutorship of Wagner; that he was too big a man to be willing to endure the rivalry of the musician. To be sure, his utterances after the breach were very intemperate, just as his praise before this event had been extravagant, but Nietzsche was never a dispassionate writer; his enthusiasms and animosities were always unbounded.

Nietzsche lays down the principle that Wagner is an artist of the decadence, and he considers it his duty to warn the world against this insidious power. He thinks Wagner is a sickness, and that he has made music sickly in that he has discovered the means of exciting tired nerves. Although Nordau, in his book 'Degeneration,' condemns Nietzsche in the most sweeping manner, he does not hesitate to seize upon his criticism of Wagner when he comes to write about the musician.

Nietzsche inquires, "Was Wagner after all a musician?" And he answers it by saying that he was in any case something more, namely, 'an incomparable actor, the greatest *mime*, the most astounding theatrical genius that the Germans have ever produced—our stage manager *par excellence*.' He belongs elsewhere than in the history of music. Wagner desires nothing but effects, and in order to reach them he discards musical traditions and overrides matters of taste.

Finally he inquires, "Was Wagner a German?" He finds no German traces in him except 'the ability to imitate.' He says his father was an actor by the name of Geyer, 'and a Geyer (vulture) is almost an Adler (eagle),' which is to say that Wagner was a Jew. This is hardly worthy of a philosopher of the Zarathustra stripe, although it may be witty. We shall probably never know exactly what was behind the difficulty. Only two persons now living could furnish authoritative information on this point; these are Frau Cosima Wagner and Nietzsche's sister Frau Förster-Nietzsche, and neither is likely to reveal the secret.

The next chapter of Mauerhof's essay is entitled 'The Dominating Impulse.' This refers to the fact that Nietzsche was the philosopher of personality, and it should be much more serious than Mauerhof has made it, since much of the latter-day glorification of individuality can be attributed to Nietzsche. The most recent play by Sudermann, 'Das Blumenboot,' has as its catchword just this expression 'personality,' and it does not give a pleasant idea of this phase of Nietzsche's influence, in that it shows how unfortunately the philosopher may have acted upon unripe minds and uncertain individuals.

Mauerhof takes a fling at the tendency of the students of philosophy to accept the statement that Nietzsche was the most individual thinker of all times. Such expressions as these Mauerhof thinks all started with the writer himself, who was an extremely crafty man, and knew how to furnish the world with battle-cries which would redound to his own glory.

It must be said that this is quite contrary to the usually accepted ideas, which make the philosopher out to be a recluse and afraid of the world rather than a self-seeking propagandist.

As might be expected of a critic of Mauerhof's temperament, Nietzsche's many illnesses and the mental catastrophe which finally overtook him are the subject of prolonged and rather cheap discussion.

Mauerhof says if we except the 'Die Geburt der Tragödie,' the 'Unzeitgemässe Betrachtungen,' including 'Wagner und Bayreuth,' all his works were written in what he calls the period of his sickness.

Then follows much concerning Nietzsche's excessive vanity and egoism, from which, however, very little that is rational can be obtained. Mauerhof explains not only his attitude towards Wagner through his egoism, but even his antagonism to Christianity in the same manner. The nations had begun to assemble around Wagner, he was an international success. In the case of Christianity, Nietzsche dared to feel envious of its great power. With cruel hatred the philosopher exposed the most deeply hidden weaknesses of the musical drama. His attack upon Christianity was more passionate and more prolonged; he devoted much of his life to discovering the inconsistencies of the dogmas of the church and its abuses.

The next chapter is entitled 'Christian and Superman.' Nietzsche had devoted six years to exploiting his friend at Bayreuth, but from this period had gained very little. After the breach he was very much at a loss to know what to do; he had little interest in philosophy, and he was disappointed in metaphysical subjects. In this frame of mind he became acquainted with Dr. Paul Rée, a young Jewish physician from West Prussia. Mauerhof lays great stress upon this relationship—a greater emphasis than is usually regarded as possible. Rée introduced him to the works of the English rationalists and the French positivists. Mauerhof even states that Nietzsche's friends were of the opinion that not he, but Rée, had written the book 'Menschliches Allzumenschliches,' so great was the intimacy of the two men. Nietzsche entered into the philosophy of the positivists with great enthusiasm; especially was he interested in their ideas concerning the origin of moral conceptions.

Nietzsche has always been regarded as one of the most brilliant and effective writers of aphorisms who have ever lived. His pithy sayings are as concentrated and as expressive as anything that can be found in any literature, but Mauerhof wishes to deprive him even of this merit. He finds his very extensive reading to have been merely superficial, and his brilliant perceptions to have been prejudiced and untrue. He considers it a great waste of time for any one to read this part of Nietzsche's writings.

Mauerhof has demolished Nietzsche as a philosopher, as a historian of art; he now dismisses him in a very caustic manner as a moralist. He says that from despair of reaching a solution of the problem of right and wrong he eventually became insane. His great difficulty was that he was unable to base his moral teaching upon any scientific or credible founda-

tion. Concerning the philosopher's idea of eternal recurrence he says it is the 'wildest, the most insane trick that a human brain has ever been able to conceive of.' He then takes up the superman, and finds this conception to have been based upon Schopenhauer and Darwin. From the former he took the idea of the 'will to live' and transformed it into the 'will for power.' From Darwin he borrowed the theory of the development of species. Mauerhof pays his compliments to Darwin in passing, and seems to disapprove of him as strongly as he does of Nietzsche. Altogether his attitude is one of great superiority. There follows then a protracted discussion of Christianity and its history, in which he poses as a progressive in deploring the influence of the Apostle Paul; he seems to enjoy the luxury of acting as a defender of the faith, and finds that Nietzsche has taken his most important ideas from Christianity. But through his perverse attacks upon the faith of our fathers the philosopher has mystified the people into believing that he is original. He makes use of the expression 'Christian Superman' and finds that the New Testament ideal of manhood is exactly like that of Nietzsche's. They are identical with the exception that they have different aims. It would be difficult even for Mauerhof to prolong his discussion to a great length after propounding such a theory.

These three studies undertaken from three very different points of view summarize in an unusually complete manner the current criticism of the philosopher, who has probably provoked as much discussion as any German literary man in the past fifty years.

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JOURNALS AND NEW BOOKS

REVUE DE METAPHYSIQUE ET DE MORALE. May, 1907. *La logique et l'intuition en mathématiques* (pp. 273-283): E. BOREL. - A plea for mathematical instruction aimed rather at developing invention in application than powers of deduction. *La Vision* (pp. 284-326): N. BOY. - A long, clear and interesting, but quite elementary account of the perception of depth or distance. *La morale d'Épictète et les besoins présents de l'enseignement moral (suite)* (pp. 327-347): L. WEBER. - The sense of the world-order bred in Epictetus a free rationality, which is his chief worth (*a suivre*). *La notion du réel* (pp. 348-362): A. LÉON. - To adequate thought unreality is recognized as possibility; in all other cases the unreal is the confused. '*La théorie physique*' de M. Duhem et les *mathématiques* (pp. 363-376): P. BOUTROUX. - Very fine distinctions are here drawn leading to the conclusion that M. Duhem marks off experimental verification too sharply from mathematical analysis; and thus wrongly subordinates mathematics to physics. *La pensée catholique en France au commencement du XXe siècle* (pp. 377-400): J. WILBOIS. - An account, from a Catholic standpoint, of the 'tumultuous' movement

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NOTES AND NEWS

PROFESSOR HUGO MÜNSTERBERG, of Harvard University, predicted, in the course of an address delivered at Lafayette University, that German ideas of education are bound to be affected by the American college system. "That will be at last a gift of the New World to the Old, which will return the stimulation and impulse that the United States received from Germany. The German influence gave to America the method of research, the Ph.D. work, the graduate school. America will now give to Germany in return the college with its broadening influence and with its democratic spirit, which imparts culture to all alike, within and without the scholarly professions. We hear so much, and sometimes, perhaps, too much, of the exchange of professors between the United States and Germany. Such exchange of persons may be well. It has gone on, after all, for decades, as German scholars have come to this country in a steady flow and American scholars have always visited German universities. But more important than the exchange of men is the exchange of institutions. The German graduate school, once imported here, has had an influence which can be felt in every corner of the intellectual life of America. And thus I trust that the American college, once imported to Europe, will never cease in its beneficial influence for the culture of the non-professional men and women."

DR. CHARLES HUGHES JOHNSTON, substitute during the past year in philosophy for Professor H. H. Horne at Dartmouth College, has been appointed assistant professor of the philosophy of education at the University of Michigan.

DR. FREDERICK LYMAN WELLS, lecturer in psychology at Columbia University, has been appointed pathological psychologist in the McLean Hospital, at Waverley, Mass.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

A REVIEW OF PRAGMATISM AS A PHILOSOPHICAL GENERALIZATION

IN a former paper¹ I have stated and examined three propositions which seem to me to contain what is essential to the pragmatist's theory of knowledge. These propositions all apply to a certain identifiable experience in which thought arrives at what is taken to be truth. This experience is preceded by a practical immediacy which presents no problems. Then, when an occasion arises which can not promptly be sized up and acted on, there is precipitated from this immediacy a complex situation in which it is possible to distinguish (1) accepted reality, or object, (2) problematic reality, (3) ideas, or tentative solutions of the problem, and (4) the interested thinker, or subject. When the problem is solved, practical immediacy is resumed, now enriched through the assimilation of a new belief. In thus directing our attention to that locus in experience in which, if anywhere, true knowledge is to be found, the pragmatist has done much to clarify the issue. Furthermore, since true knowledge *is* to be found only in that locus it must be possible to find there all the elements which are essential to an adequate description of it. I therefore agree with the pragmatist (I.) that truth is always related to a particular interested intention, and (II.) that the proof of truth must be contained within the same particular experience which manifests the intention. But the pragmatist maintains further (III.) that the proof, mark, or guarantee of truth is the *satisfying* character of that moment of the process in which the cognitive interest is fulfilled. It is this generalization which distinguishes pragmatism as a radical theory of knowledge; and it appears to me to be incorrect. Although the moment of truth undoubtedly has its place in the practical context, and is qualified by those feelings which are proper to the successful issue of any enterprise, nevertheless it can not properly be said to *consist* in these feelings. Taking the experience as the pragmatist himself finds it, we are impelled to inquire for that element in

¹ 'A Review of Pragmatism as a Theory of Knowledge,' this JOURNAL, Vol. IV., p. 365.

the situation which gives rise to the feeling of satisfaction, and the absence of which would require us to prolong the inquiry, or to revise a satisfaction prematurely felt. Now according to the pragmatist's own analysis, the satisfaction is legitimate and sound *when a judgment has been found which is consistent with that which is accepted as real*. The virtue of truth, then, is the presence of a discovered reality possessing distinction and compatible relations. The experience of truth is the affirmation of experienced reality together with the reaffirmation of residual reality. So far as truth is concerned, the important element of the situation is identity or consistency with reality. On the other hand, so far as the human life is concerned, the important element in the situation is the relation of discovery to antecedent needs and to subsequent uses. Thus, it would appear that in so far as pragmatism purports to be a definition of the meaning of truth, it is untenable; while in so far as it exploits the human connections and bearing of truth, it can not be denied.

In the present paper I shall present certain further propositions which I have gathered from the contemporary literature of pragmatism, and which are in the main philosophical rather than epistemological.

I. *All Truth Has Practical Corollaries*.—It is important to distinguish this proposition from that in which it is maintained that all truth is the function of some interested intention. The only interest which can be proved to be common to all cases of cognition is the theoretical interest itself. Doubtless one can not be said to know, whether truly or falsely, unless one wants and intends to know something; but the pragmatist is disposed to extend this generalization somewhat loosely, and to confuse the constant and universal relation of truth to a cognitive intention with the general service which truth may render to various collateral interests. These two considerations are very different. The cognitive interest itself is indispensable to truth, but the relation of collateral interests to truth is, so far as I can see, entirely accidental. That there is always some such relation no one will be disposed to deny. The cognitive interest is one of the functions of a complex organism, and has developed because of its organic usefulness. Whatever is known is available for any uses of which the organism is capable; it can be felt, acted on, talked about, written down, thought about or dealt with in any of the other ways characteristic of human life. Mr. Schiller goes to unnecessary lengths to show that there are no useless truths. His conclusion could be drawn at once from the unity of the psychophysical organism; the sensory, associative, affective and motor elements in human nature all contribute to a more or less com-

mon fund of resources. And one may easily go farther and show that the solidarity of society and the ready means of communication and intercourse make these resources available for humanity at large. But this is very far from a proof that truth *consists* in such uses. They are involved because of the organic and social connections of the truth-seeking function; but truth would not cease to be truth if some organic or social abnormality were to make it impossible to use it. Truth which is used, is indeed likely to be widely distributed and long remembered; truth which is not used will be neglected and forgotten; but even these circumstances do not affect its status as truth. I may illustrate my point by showing the ease with which, following the pragmatist's methods, it may be proved that truth consists in its being put to some particular use. Thus all truth is useful to philosophers. There is nothing true which they can not talk and write about; we may search human knowledge in vain for something which is not more or less relevant to their interests. And yet I suppose no one would argue that truth consists in being talked and written about by philosophers. If the philosophic function of humanity should become atrophied much truth would doubtless fall into disuse and be forgotten, but it would not have been disproved. Similarly, we may conceive every human or social interest to disappear, and the knowledge which these interests employ would not be affected in the slightest degree as respects truth. Knowledge may in this way cease to exist, but it does not change from truth into falsity. Inasmuch as the proof of truth need not wait for any uses beyond the cognitive intention itself, the issue is already concluded when these uses are contrived. Or if no such uses should ever be contrived, the conclusion of the issue would not on that account be invalidated; for knowledge in disuse and untruth are two clearly distinguishable things.

There is a closely related proposition which has tended to obscure the point which I have just raised. All truth tends to be useful truth because the cognitive interest in its genesis is an offshoot of the self-preservative interest. A certain vital service must always be required of it. But those truths which are most vital, that is, most intimately connected with the organism's general interest in existence, are not so much useful truth as they are *truths of use*. The most immediately important truths, the cash truths, so to speak, are answers to a question of this form: *What will happen to me if I do a to b?* Some truths are practical in their content. If I find that *c* will happen to me if I do *a* to *b*, I am experiencing the nature of a temporal circuit including terms belonging both to the environment and to my own body. Experiment is here not the external test of a theory, but the living through, the direct serial experience

of, a set of connected events. Truths of natural science are largely of this order; and it is natural to regard these as generally typical because of their bulk and urgency. But it will be observed that truth is here made not by any practical inferences that are drawn from the truth itself, but by the direct experience of a part reality which embraces practical inferences.

Thus while we agree that all truths have many practical corollaries and relate themselves potentially to all human concerns, we must insist that such inferences do not either make or unmake truth. And, secondly, while we agree that there is a great body of truth which is essentially practical or experimental in its form, we must insist that in this case the usefulness lies in the character of the reality which is selectively known, and does not constitute an external and delayed test of truth.

II. *The Difference between One Concept and Another Consists in the Difference it Makes.*—This proposition is supposed to contain an important methodological application of the general pragmatic theory. In our definition and comparison of concepts we are to look to their practical implications. Where there are no practical implications a concept is meaningless; where these are equivocal the concept is obscure; where two concepts are indistinguishable as respects their practical implications, they are not two but one. This is doubtless wholesome advice, but it seems to me that it could be stated in much clearer terms. Philosophy has unquestionably suffered from the use of vague conceptions. As a science it is almost entirely lacking in unequivocal symbols. Philosophers borrow the language of common sense with all of its indeterminateness and latitude of meaning, and make matters worse by extending its application. Of two parties to a philosophical discussion it is unusual for either to know just what the other is talking about, if, indeed, he knows exactly what he is himself talking about. But it is difficult to see how we would gain in clearness by restricting ourselves to the *practical* terms of common sense. In the familiar phrase 'sufficient for practical purposes' we find that even common sense recognizes that such propositions as are clear enough to act on are very far from being unambiguous. So far as I can see, this pragmatist contention reduces to two propositions. In the first place, an idea must have identifiable and distinguishable content. Ideas are not different because they are given different names, but only because they contain different elements of experience. This involves no more than the old logical formulas concerning the identity of indiscernibles and the importance of clear and distinct ideas. But doubtless it is worth while to reiterate the importance of keeping close to experience, of always knowing what, and precisely what, one is talking

about. In the second place, all known differences are practically significant. This is the proposition which we have just considered above. It is quite true that if we really know what we are talking about, if we really know 'the difference,' we must have added something to our stock of practical resources. There can not be any known difference which *makes* no difference, either actually or potentially. This fact may serve as a rough-and-ready test of conceptual distinctions, but it will still be true that to discover the content of the conception or the precise nature of the difference, we must resort not to the practical applications, but to the region of experience of which the concept purports to be a description.

Here again it is important to consider the bearing of natural science upon the theory of knowledge. If it be true, as I have maintained above, that most of the truths of natural science are experimental truths, then it will follow that real differences in natural science are experimental differences. In so far as natural science attempts to define and systematize processes of nature which are at once objects of action and sources of consequences for the organism, it is true that scientific concepts really differ only in so far as they distinguish possible practical situations. Professor James quotes the following from Mr. W. S. Franklin: "I think that the sickliest notion of physics, even if the student gets it, is that it is the science of masses, molecules and the ether. And I think that the healthiest notion, even if the student does not wholly get it, is that physics is the science of the ways of taking hold of bodies and pushing them."² Now while I heartily subscribe to this opinion, it would seem to be on other grounds than those which recommend themselves to the pragmatist. The results of science are misunderstood mainly because their original reference is lost sight of. Masses, molecules and the ether, as empirically derived and experimentally verified, are *modes of behavior*. They describe what happens in nature, especially in its spatial and temporal confrontations with the organism. Error will almost inevitably arise if the concept is taken out of its context in experience. But this scarcely confirms the thesis of pragmatism. It proves only that descriptions of the process of spatial and temporal redistribution are *what they are found to be*, and not something else. It proves nothing, for example, concerning the truth of arithmetic or algebra, which do not describe spatial and temporal redistributions. To lose sight of the abstract elements in experience to which mathematical systems refer, and to identify them with the practical coordination into which they enter, is to be guilty of the same fundamental confusion to which the pragmatist objects in the case of the conceptions of physics.

² 'A Defense of Pragmatism,' *Popular Science Monthly*, April, 1907, p. 353.

III. *The Adequacy of Truth Depends on the Degree to which it Satisfies the Individual or Society as a Whole.*—If this proposition were true, it would have very important philosophical consequences; and I am inclined to think that the ethical and religious importance which pragmatism possesses for some of its advocates depends upon its acceptance. And yet it would appear not only to be without foundation in fact, but even to contradict the earlier claims of pragmatism itself. In the pragmatist's account of the way in which truth gets itself established, it is admitted that what is already accepted as real plays the controlling part. Our hypotheses are selected or rejected by nature, given in the form of funded belief. Judgments are workable or verifiable in so far as they are consistent with what is taken to be real; and however far back we go this will always have been the case. What we now accept as true has at some earlier time proved to be compatible with what was then taken to be true. The present proposition implies that nature proposes and man disposes, but according to the above analysis man proposes while sensation, relation and funded truth dispose. Leaving aside the specific admissions of pragmatism, the present proposition is not a faithful account of human experience. Consider, for example, belief in a life after death. The human tendency is not in the direction of the formation of more congenial beliefs, the construction of a universe that shall best answer given human needs and hopes, but in the direction of an adjustment of these needs and hopes to things as they are found to be. Enlightenment is far more likely to bring disillusionment than the confirmation of hopes, and this is true not only of the individual, but of the race. Undoubtedly we try to find evidence which shall suit us, but such suiting does not constitute or even strengthen the evidence. Equilibrium between life and its environment is reached in the end not by getting a truth to suit our uses, but by getting used to reality.

IV. *Knowledge Modifies and Adds to Being.*—Pragmatism makes much capital of this proposition. Without careful interpretation, however, it is so equivocal as to be almost meaningless. It is undoubtedly true that knowledge adds what knowledge is. For every act of knowing, the world is richer by that knowing. Thus the world of knowledge, in its range and systematic unity, is being extended and constructed as the days pass. But this must not be taken to mean that the objects known are either constituted or essentially modified by this fact. I can not be said to know what a past event *was* unless my knowledge obtains access to it *as it was*. In an earlier paper I have attempted to show how we may be said to know the past in its own proper temporal locus.³ If we can not thus know

³ 'The Knowledge of Past Events,' this JOURNAL, Vol. III., p. 617.

the past, we can not know historical events at all; for to every event its own particular time is an inalienable part. But the problem concerning knowledge of the past is essentially the same as the general problem of knowing anything beyond the temporal instant of the psychological knowing state. For this and for other reasons it appears to me absurd to contend that knowledge makes the world. Knowledge does make *its* world, it may even be said to make *our* world; but there is a tremendous significance, practical, philosophical and religious, in this difference between our world and *the* world. If the difference be retained and construed strictly in terms of a realistic theory of knowledge, then humanism is not a metaphysics, but a philosophy of history; not a theory of being, but an interpretation of life.

In this study of pragmatism I have attempted interpretation rather than refutation. My objections to the opinions of the pragmatist relate less to their substance than to the importance which he attaches to them. But in Proposition III. in my 'Review of Pragmatism as a Theory of Knowledge' I have attempted to state a radical contention which may perhaps serve to bring the present controversy to a point. In so far as the pragmatist contends that the proof of truth *consists essentially* in the satisfaction of the cognitive interest, his position is unequivocal and, as it appears to me, untenable, for in this proposition the relation of knowledge to reality is explicitly subordinated to its relation to the knower himself. But since we can not leave reality wholly out of the question, knowledge is thus made a mode not of the reality known, but of the real knower. Pragmatism here seems to face a dilemma. If the knower has a permanent and definable nature, but exists only in moments of satisfaction, the outcome is skepticism. Knowledge is assimilated to the knower, and the knower is reduced to an irrecoverable moment of immediacy. But at this point absolute idealism comes to the rescue of pragmatism; for in absolute idealism the knower is provided with a structure which makes him capable of supporting knowledge together with the reality which it has previously absorbed. The dialectical situation, then, would seem to be this. In so far as pragmatism cleaves to empiricism, it must forsake its subjectivist or relativist theory of knowledge, for empirical subjectivism or relativism amounts to the same thing as skepticism. On the other hand, in so far as pragmatism cleaves to subjectivism or relativism, that is, insists that in knowledge the thing known is subordinated to the knower, it must abandon its empiricism for some form of transcendental idealism; since if the thing known is to be reduced to the knower, the knower himself must be erected into a permanent and self-subsistent entity capable of supporting the whole.

Unless I have greatly mistaken the temper of pragmatism, this doctrine is primarily empiricist and only secondarily relativist. I feel sure that this is the case with Professor James. How often does he praise pragmatism because to his mind it *reflects nature*! Thus he says: "You see how democratic she is. Her manners are as various and as flexible, her resources as rich and endless, and her conclusions as obedient and malleable as those of mother nature."⁴ In other words, nature is various, temporal and individual; and the justification of pragmatism lies in its power to reveal nature in these her native and proper characters. But this implies that the best thought is the most transparent, the most hospitable, the most generous thought, in which nature flows through the very veins of mind.

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THE CONTINUITY OF CONSCIOUSNESS

THAT consciousness is empirically without gaps seems to have become a sort of psychological axiom. It is no purpose of this article to deny that consciousness is continuous on the side of 'reality.' I ask only whether in the region of 'appearance' we find such continuity, whether concrete spontaneous experience is characterized by it? And first there must be some agreement as to what we are talking about, even although there is to be no attempt at defining consciousness. It is enough if we say that consciousness, if there be any such thing, must be a particular sort of 'that' in the field of experience. I hardly see how we can otherwise mean by the word 'consciousness' anything identifiable. For although it may be quite true that trees and houses are consciousness, it is not empirically evident that they are.

As soon as the matter is stated in this way, the continuity in question, as something directly observable, seems rather more than doubtful. No doubt, perhaps, consciousness *must be* continuous; but that, as a primary fact, it *is* continuous is far from certain. For if the claim of continuity is to be maintained, continuity must appear as characteristic not merely of some experience, but of all experience, of vigorous action as well as of introspection, of the philosopher working in his garden and thinking chiefly of future onions and potatoes as well as of the same philosopher studying reflectively his 'stream of consciousness.'

If consciousness is to be pronounced empirically continuous it must be either that all the objects which crop up in the course of

⁴ 'Humanism and Truth,' *Mind*, N. S., Vol. XIII., p. 364.

experience are evidently cases of consciousness, or that they come to us having a gapless fringe or penumbra of consciousness, or that the continuity is maintained by means of a combination of objects characterized as consciousness and of consciousness-penumbra. It is the first alternative, I think, which is meant by the advocates of continuity. That is the sense in which for a long time I regarded the continuity in question as psychologically evident. So far as this paper has any thesis at all, it is to suggest a way of accounting for this opinion.

Whatever else consciousness may mean or signify, used in the traditional sense it means something equivalent to 'state of mind,' and this, as the persistence of solipsism as one possible logical alternative reminds us, is something essentially private, presented immediately to only one observer. Any attitude toward the field of experience, or toward any of its objects, which would tend to characterize them as essentially private and restricted to the inspection of one observer ought to make them feel less like independent and public objects and more like the kind of thing we naturally call consciousness. But this, I think, is what introspection does. It narrows the field of attention, and objects within it take on a certain flavor of subjectivity from the mere fact of emphasizing so much the 'me' in the given situation. Experience is just enough distorted to require, for its description, terms that are not quite suitable for other times and conditions. In so far, then, as introspection is able to transform the 'thats' of normal experience into consciousness thats, it may be quite true that consciousness is empirically continuous while this sort of observation is maintained. But is it not a case of 'the psychologist's fallacy' to attribute to wholly spontaneous and unreflective experience the peculiar quality that experience takes on when, without particularly meaning to do so, we look at it in a way that characterizes it as our own and as 'states'?

But we can not continually 'hold up' life in the interest of philosophy, and the section of experience through which consciousness may, possibly, have been continuous, must be followed by sections full of practical interests and physical energy, in which consciousness very probably does not exist, consciousness, that is, as one type of 'that' along with other 'thats,' and therefore as something identifiable and distinguishable. Accordingly, if there is any truth in this way of describing the facts, consciousness is empirically not continuous, but occasional and intermittent.

I have preferred to use the word 'consciousness' in a loose and popular fashion, and there is another word, possibly not less dubious than 'consciousness,' which I have used with rather more confidence,

and that is the word 'experience.' It may be objected that I deny the continuity of consciousness, but that I insinuate the continuity of experience, and that it really makes no difference which word is used. There may be a substantial degree of justice in this criticism; and there may not be: it depends. But instead of speaking, in this instance, of the continuity of experience, I should prefer to call that continuity which has been ascribed to consciousness, continuity of empirical situation. But even this continuity is rather a *must be* than an *is*, in so far as our faith in it is based on the thought that an empirical gap must have enough content to be observable and thus fill up its own interval. This would be evident in the case of any one who, though despairing of discovering gaps with the naked eye, might yet be hopeful of finding them with a microscope. And on this point Professor McGilvary's capital figure of the fly and the ointment, in his recent article¹ on this subject, is worth recurring to. When the fly is taken out, and the ointment is left in its 'proper purity,' then we have continuity of consciousness, not interrupted by objects that are not themselves cases of consciousness. I may be reading too much into the metaphor, but it serves so excellently to signify continuous 'consciousness' that I shall take advantage of it. When we take out the fly and the ointment flows together, we have, of course, continuity of ointment, but if the metaphor is to represent experience the fly must be left in. Have we, in this case, continuity of ointment? No, certainly, but possibly yes also, if the fly is really ointment in spite of appearances. In one sense, though, there is continuity, since the ointment presumably flows all round the fly and is continuous in spite of it. I think, however, that the continuity Professor McGilvary argues for runs right through the fly. Of course, it will not do to take a figure of speech very literally, but this one seemed too excellently suited to illustrate the discussion to be ignored. Now there is no difficulty in identifying ointment, and the presumption ought to be that if we say things confidently about consciousness it is because we can point to it with the same certainty with which we would point to the ointment. If Hume were alive to-day he would have put his finger on it long ago, or shown that searching failed to discover it. But if the fly is really a case of specialized ointment and therefore does not interrupt the continuity, it seems quite evident that ointment, or consciousness, is the whole thing; that is, speaking empirically, not something that can be discriminated, but the entire empirical situation, in which case the word consciousness means only the thing in which gaps are unthinkable. And it needs no argument to prove that a thing essentially without gaps is essentially continuous.

¹ This JOURNAL, Vol. IV., p. 225.

It may be that, in this connection, the term 'transitive and substantive states' can be of some use in describing the facts as they can be observed. As a matter of course we call this topic of discussion the 'stream of consciousness,' and that vivid term has become so inevitable that it controls our conception of the thing with real authority. Transitive 'states' and substantive 'states'—that is what experience is said to be made up of, and I mean by experience here the empirical situation, whatever that may be. That is, the empirical situation consists of 'states' which must be owned by somebody. I do not complain of this usage while we speak as psychologists for psychological purposes, but it seems evident that we glide, almost unconsciously, into what intends to be a description of primary experience, while we retain a phraseology invented for a particular point of view in a particular science. To claim that the empirical situation under normal circumstances consists solely of 'states' is to be the victim of a special phraseology. The situation may contain states, however, and transitive states in the psychological meaning of the word, that is, transitive states of consciousness and not changing conditions of objects. May it not be that a state of consciousness is, or usually is, a transitive bit of experience? Not all transitive things are consciousness, but is not consciousness like something without an anchor, something fluid, with movement in it? I ask only concerning what the word seems instinctively to turn toward before we confine it in a definition. If subjective states are a transitive sort of thing, and introspection seasons its objects with a subjective flavor, it is clear why the term 'stream of consciousness' is so appropriate; but does it describe the straight experience which never heard of a psychological point of view? I can not think that it does.

Nevertheless, as ultimate reality, the fly may be ointment and consciousness may possess continuity in some sense which is not identical with continuity of empirical situation. I must say that after writing that phrase so many times I should be only too happy to substitute for it 'continuity of consciousness' if the substitution were sure not to lead to misunderstandings. Yet if there be some particular sort of 'that' to which the word 'consciousness' ought to refer, we surely ought not to apply it to everything else except in the way of metaphysical interpretation. But here two difficulties suggest themselves. Good thinking presumes a consistent use of words, and it does not seem consistent to equate, in the higher regions of metaphysics, words that notoriously will not be equated on the lower level of normal life. And if one is not deterred by this, at least one wishes to take one's stand in philosophy, squarely

upon experience, and the judgment in metaphysics that flies are ointment would seem remote enough from the judgment that flies are flies. But that, perhaps, is the same difficulty.

The above remarks are intended as hardly anything more than suggestion and inquiry. It is worth while, however, to insist upon the distinction between the *is* and the *must be*, even although the difference is one of degree only, and to invite the advocates of the continuity of consciousness to tell us under which of these headings such continuity occurs and whether the consciousness which is continuous has any subjective character or is simply a psychological word for 'empirical situation.' Are flies flies or are they ointment? That is the question.

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DISCUSSION

PROFESSOR DEWEY'S VIEW OF AGREEMENT

THE article by Professor Dewey on the 'Control of Ideas by Facts'¹ presents such an opportunity for definite questions by reason of its analysis of a specific situation that I can not forbear stating, in an interrogatory form, the difficulties I experience. My agreement with his logical position is so fundamental that any outstanding divergence on minor points must be capable of amendment.

Foregoing preliminaries, I shall plunge into the heart of the matter. Suppose, to use his illustration of the man lost in the wood (p. 201), the man has been hunting and, having bagged enough game, decides to return home. Presently he discovers an unfamiliarity in the appearance of things. We have now desire on the man's part to get home and a recognition that he is lost. Temporarily his action is stopped. He must reflect; but this reflection is for the purpose of enabling him to fulfill his primary desire to get home. Under the new conditions, the old desire has given place to a more complex one involving, consciously, means and end. This signifies that the focus of attention has been shifting gradually. He must find the *way* home. This gives a very complex reflective situation. Observation follows. He sizes up the surroundings, attempting to take in all the relevant facts, such as the lay of the land, the presence of conspicuous objects, the direction of the sun, etc. If he recognizes a landmark, a more or less definitely organized idea of the environment arises. "It is not some little psychical entity or piece of con-

¹ This JOURNAL, Vol. IV., p. 197.

sciousness-stuff, but is the interpretation of the locally present environment in reference to its absent portions . . . ” (p. 202). It may be that he isn't certain of the correctness of his idea. If he reaches by its means, however, a place he is sure of, he remarks, if he is reflective, “That idea of mine *was* true.” I would lay considerable stress upon the past tense of the proposition.

First, I would raise the question of a possible ambiguity in the use of the term ‘plan of action’ as synonymous with idea. I admit frankly that the thinking has been purposive, but is the idea a purpose? “That is, acted upon sincerely, it has led to the desired conclusion; it has *through action* worked out the state of things which *it contemplated or intended*” (italics mine). Now I would submit that the *man* intended to go home, not the *idea*. Referring back to the analysis above,—in order to get home (primary desire) he discovered that he must find the way (secondary desire). The idea is connected with *that*, not *directly* with the getting home. “The agreement, correspondence, is between purpose, plan and its own execution, fulfillment.” Here, again, purpose is made synonymous with plan, and plan, apparently, with idea. It strikes me there are two purposes in the case, one subordinate to the other: (1) to get home, and this is not the idea; (2) to get a true idea of the way, and this again is not the idea.

‘As to the agreement of the idea and the environment’ (p. 202), Professor Dewey shuts out, first, presented reality, ‘for that reality is the reality of himself lost.’ I should say, because, by the terms of the problem, presented reality is not the reality wanted. “Not with the complete reality, for that at this stage of proceedings is the idea itself.” No, once more, for the reality sought is not present by the very nature of the search. The conscious experience is, I submit, more complex than Professor Dewey realizes. The individual is, in all probability, a practical realist. He has just come from home and believes that the forest stretches away beyond his ken and then gives place to the fields which lead up to his home. Now an adult has certain organized constructs; one of these is the impersonal physical world. I would refer in this connection to James's doctrine of the many worlds.² These constructs always have gaps in them when a problem arises concerning them. The man's construct of the physical world is of this kind. He may know the plan of the next village or the direction of New York from Albany, but, just now, he wants to know the way home. Consequently he disregards his other geographical knowledge, because it isn't relevant. It is to fill this particular gap that the idea arises. Until it drops into place, so to

² ‘Principles of Psychology,’ Vol. II., p. 291.

speak, it is psychical, personal, *his* idea. If it is admitted to be true, it flows over and, behold! we have our construct with the 'aching void' filled; the problem has disappeared. My terms must remind the reader of James's description of remembering a name, and it is built upon analogy with that. What, then, is the agreement? It would be paradoxical to say 'agreement with this gap,' and yet, in a sense, that is the fact. If it were not for this functional relation of idea as psychical and the physical, impersonal world, postulated but not completely known, the idea would not, when its truth is recognized, fill the gap, in the physical construct, just where it does. This is the movement in what I would call the organization and building up of the physical world. We say the idea is true. Why? Because it agrees with the now constructed physical world. We can look at the *same reality as physical and as psychical*. But, natural realists that we are, we believe that the world was that way all the time. We say the idea *was* true. This is where an unconscious duplicity or straddling enters, which I believe accounts for a good deal of the trouble with 'correspondence.' 'Agreement' represents an endeavor to harmonize structure and function, the past and the present. Now this is a perhaps unduly technical way of asserting that we seek to *disregard the fact of reconstruction and growth because we are dealing with a construct that we look upon as non-temporal and impersonal and common*. I do not think this dialectic movement in the erection of an impersonal and *common* world is adequately recognized in discussions of truth. Extreme pragmatists emphasize too strenuously the fact of function, of reconstruction, of change, the personal side. Extreme intellectualists see only the formal, the structural, the timeless, and thus *may* fall into the copy view. As in most controversies, a middle position is more likely to be right. 'Agreement' involves an unconscious attempt by our thought at a reconciliation. Common sense believes 'it was that way all the time if we had only known it.' A warning may prevent misinterpretation. This is a logical question, primarily, and logic has nothing to do, directly, with realism and idealism as metaphysical systems.

Early in this article I criticized Professor Dewey for a confusion of idea and purpose, asserting that the term 'plan of action,' so much used to-day, is ambiguous. An illustration occurs to me that may bring out my position better. Suppose I am standing at one side of a house with a friend, a house we are both acquainted with, and the question arises about the structure of another part of the house, not visible from where we stand. Both of us have ideas which until they are proved by actual observation we regard as

personal, while the house is common and impersonal. Later we may have the purpose of going around to see which of us is right, but that is not the idea, nor does the idea guide us. Our 'plan of action' will be to walk around. Before we seek to verify our ideas, what do we believe? If I am not mistaken, that the house there is of a certain form and the invisible portion 'hangs on' the part seen by us. The question before each is, Have I filled it out properly?

Perchance, a side-light can be thrown on this problem by a contrast. Some ideas are plans of action, literally, and yet not concerned with truth. I have a problem at present. It is this, Shall I go to the library or down town? It is surely a reflective situation, and I can think of myself as doing either, but I do not raise the truth question. Why? After I go down town I do not say, I was right. Why, again? Because I am dealing here *with another sort of reality*. Ordinarily people do not regard themselves as determined, as the house is. The very nature of this sort of reality is to be changing, active. It strikes me that genetic analysis of the various constructs we make, would go a long way towards solving logical problems.

R. W. SELLARS.

UNIVERSITY OF MICHIGAN.

SOCIETIES

SECTION OF ANTHROPOLOGY AND PSYCHOLOGY OF THE NEW YORK ACADEMY OF SCIENCES

REPORT OF THE SECRETARY

SINCE last reported in these pages, two meetings have been held, in conjunction with the New York Branch of the American Psychological Association.

At the meeting of February 25, held at Columbia University and the American Museum of Natural History, Mr. S. Froeberg gave the results of an experimental study of 'Reaction Time as Affected by the Intensity, Area and Duration of the Stimulus.' He used chiefly light stimuli, and found the reaction time to decrease as the intensity, area or duration increased; as the magnitude of the stimulus increases in a geometrical series the time of reaction decreases in arithmetical progression. A given ratio of increase of intensity produces about twice as much decrease in reaction time as does the same ratio of increase of area or duration. In case of sound, also, increase of intensity brings decrease of reaction time.

Dr. Harvey Carr reported 'A Case of Incipient Hysterical Trance.' The subject was a young woman who since the age of six

years, following an attack of typhoid fever, had been subject to recurring attacks of partial trance, in which, though no unconsciousness, amnesia or alternation of personality occurred, there was motor paralysis (without rigidity) and the following peculiar visual experience. Objects appeared to move away, while remaining, at first, clear-cut and real; next they either remained in the distance or disappeared in a haze, or sometimes the whole visual field became blank. Her feet, as she lay, seemed far away, and this visual illusion was accompanied by the tactile illusion of being indefinitely long. Auditorily, the experience was one of great quiet. The experience was terrifying, but she was unable to struggle or cry out. The subject presented some further symptoms of hysteria, and a comparison of her case with that of Helène Smith leads to the view that only circumstances making the subject antagonistic to her trances and to occultism prevented her from developing into a trance medium.

Mr. W. C. Ruediger spoke on 'Individual Variations in the Area of Distinct Vision.' He has explored an area near the center of clear vision by the tachistoscopic method, and determined the limits within which the letters 'u' and 'n,' of a certain type, can be distinguished 90 per cent. and also 75 per cent. of the time. There were found to be individual differences in the area of distinct vision, comparable in magnitude to the differences found in most other traits. Slight if any correlation could be detected between the size of the area of distinct vision and the speed of reading or the number of fixation pauses per line of print. The amount read during one fixation pause is, in most persons, much less than the amount covered by the area of distinct vision.

Brother Chrysostom, in discussing 'Space,' noted two sources of confusion in treating it. The first consists in a failure to distinguish between real and ideal space. Real space may be defined as the real extension of a given body considered as contained within the surfaces that bound it. This concept is complex, containing an objective element—a real extension, and a subjective element—a logical relation. Real space, viewed concretely, is neither infinitely divisible nor infinite, as current physical and astronomical discussions illustrate. Confusion also arises from an implied identification of space and place. As real space is primarily real *extension* and therefore *solid contents* as bounded, so place is primarily the *bounding surface* referred to the enclosed or bounded body. The two concepts are complementary, not identical.

Professor Dickinson S. Miller traced the doctrine of 'Imageless Thought' back to Descartes, Spinoza and Schopenhauer. The argument for it has been that since the work of thought, the conclusion

reached, can not be attributed to sensation or to images of sensation—since, indeed, the work of thought may be accomplished in the absence of imagery—therefore there must be some other agent in thought, and consciousness must contain *something* besides sensation and imagery. To this argument the answer is that there need be nothing there. Nothing capable of doing the work of thought need show in consciousness. Thought as a function must be distinguished from conscious content. As a function, thought is essentially unconscious. It makes no difference how impotent and irrelevant the images in consciousness may appear, if only by good luck their associations are such as to lead to the right conclusion. What those who testify to experience of imageless thought really experience is probably a bodily feeling, which, left unanalyzed, appears as a feeling of satisfaction or of being on the right track, but which, when carefully attended to, is found to be of sensory quality, like all other conscious content.

Dr. C. B. Bliss sought to show 'Possible Relations between the Trinities of Psychology and Theology.' Theologians have usually sought to derive the concept of the Trinity from quite other than psychological sources. Yet the existence of a psychological trinity is certainly a suggestive fact in this connection; it seems possible that the concept of God as threefold has arisen from conceiving the fundamental tendencies of the human mind as indefinitely expanded. Expansion of the intellectual tendency would give God as the world ground; expanding the emotional tendency would give God as universal love; and expanding the active tendency would give God as universal action.

Professor Keyser, under the title 'Some Relations of Geometry to Philosophy and Psychology,' discussed certain questions connected with the bases of geometry. In Hilbert's 'Foundations of Geometry' culminate the efforts of western thinkers from pre-Euclidean times so to analyze the space intuition as to provide a simple and complete set of independent axioms for the science of space, in particular for what is now distinguished as Euclidean geometry. For Hilbert as for Euclid, the elements of space fall into three classes or systems, points, planes, lines. Hilbert's axioms are statements of certain relations that shall be the fundamental relations satisfied by the elements, but—and this is very important—the elements are not further defined. Accordingly, if one asks, What are points, planes and lines? the answer is, They are any three systems of entities that satisfy the axioms and require no others. Are there other entity systems than those of points, planes and lines, that satisfy the Hilbert axioms? There are infinitely many such other triplets of systems of entities.

One of the most obvious of such triplets consists of the system of points of space except a single specified point, say *P*, the system of all the spheres containing *P* regarded as bereft of *P* and so called pseudo-spheres, and the system of all the circles containing *P* regarded as bereft of *P* and so called pseudo or pathological circles. These three systems perfectly satisfy the Hilbert axioms, and the description of the 'space' composed of these systems of entities regarded as elements is *logically* identical with Euclidean geometry, though *psychologically* the geometries are as different as fire and water or as red and bitter. Euclidean geometry is, therefore, one; psychologically many—ininitely many.

On April 22 a meeting was held in the psychological laboratory of Yale University, by invitation of the Yale Psychological Club.

Professor R. S. Woodworth explained 'A Method for Measuring Differences of Order, and its Use in Studying Correlation.' The method differs from the Spearman method of counting up differences of rank in that only the *relative* positions of the terms are considered. The unit of change in order is the transposition of two terms, and the difference between two orders of the same terms is measured by the number of transpositions necessary to pass from one order to the other. This number is easily counted up, and the necessary constants, *e. g.*, the total number of transpositions necessary to *reverse* a given order, are also readily calculated. The method has the same advantages in psychological work as are brought out by Spearman in favor of his method of measuring changes in rank; the present method is claimed by its author to be more accurate and adequate for the purpose in hand.

Mr. F. N. Freeman gave a preliminary report of his 'Studies in Writing Reactions.' The reactor traced lines with an ordinary pencil on a fixed sheet of paper, as in writing, and the tracing was taken on the moving kymograph strip beneath through a typewriter ribbon. The pressure changes which accompanied the movement could also be recorded. The three general types of reaction which occur in writing, consisting, respectively, in starting a movement, stopping a movement, and changing the direction of a movement, were compared as to their reaction time and as to the relative speed, amplitude and pressure of the movements themselves. The reaction time in stopping a movement was, on the average, over 40 per cent. slower than in starting a movement. This may be accounted for on the ground that preparation for starting a movement can be accurately made. On the other hand, no such preparation can be made in stopping a rhythmic movement, such as is used in writing, since the character

of the inhibition depends on the stage of the movement which happens to be in progress at the time of the signal. In starting a movement the reaction time varied with the complexity of the course of the movement after the reaction, which seemed to be reflected back into the preparatory state. Changing the direction was the slowest of all. Consciousness in general was correlated with the whole progressively developing coordination rather than with its separate elements.

Dr. F. Lyman Wells discussed 'The Validity of Individual Judgment as Measured by its Departure from an Average.' When a number of representatives of a given class or group independently pass judgment on, say, the relative merits of different authors, the average judgment is important in that it shows how the authors have impressed this class or group, and the deviation of an individual's judgment from the average measures the closeness of his conformity to the group standard. It remains possible that an individual may judge by a better standard than that of the group, and in fact persons who from their experience and ability would be expected to be the best judges of literary merit are sometimes found to differ greatly from the average. The standard of judgment actually employed by a group may differ widely from the standard which the group would themselves consciously assign as the best: such a difference was found by experiment to obtain in the case of judgments of literary merit.

Mr. W. C. Ruediger spoke on 'The Period of Mental Reconstruction.' A carefully conducted questionnaire, adapted to statistical treatment, showed great individual differences in the suddenness and vividness of the transition from early beliefs and intellectual attitudes to those of mature life. A large share of the individuals questioned are unable to point to any period of transition, while others report a perfectly defined intellectual 'conversion.' The period of this change is on the average later than that of religious conversion.

Professor Edward L. Thorndike reported some 'Experiments in Memory for Paired Associations.' Twenty-five adults practised from 12 to 40 hours in learning the English equivalents of German words previously unknown to them. This practise did not appreciably increase the number of pairs learned per hour; the result for paired associations differs in this respect from that obtained by James and others in memorizing poetry and by Ebert and Meumann in memorizing nonsense syllables. Also the rapid loss of memory found by Ebbinghaus in case of nonsense syllables did not appear; the loss within a month was very slight. The correlation between the power to remember for a minute and the power to remember for hours

and days is surely positive and probably very high. Individual differences in memory, in this test, are of approximately the same magnitude as in efficiency of observation, controlled association and selective thinking, and greater than in reaction time and sense discrimination.

Mr. H. N. Loomis reported his work on 'Reactions to Weights of Unequal Size.' The movements of the lifted weights, being graphically recorded, showed that, on first approaching the experiment, a person lifted the bulkier weight with the greater force; after repeated lifting this inequality decreased.

Professor James McKeen Cattell read a paper on 'Perceptions, Images and Illusions,' in which he emphasized, as important among the points of difference between a sensation and an image, the weaker tendency of the image to issue in motor reaction, and advanced a number of facts going to show that this relative lack of motor tendency was valuable in enabling us to distinguish images from sensations.

Professor W. P. Montague classified and criticized the various conceptions of truth as introductory to a view of 'Truth as Compossibility.'

R. S. WOODWORTH,
Secretary.

REVIEWS AND ABSTRACTS OF LITERATURE

The Persistent Problems of Philosophy. An Introduction to Metaphysics through the Study of Modern Systems. MARY WHITON CALKINS. New York: The Macmillan Co. 1907. Pp. xxii + 575.

The scope and purport of this interesting book can not be better stated than in the words of the writer: "I have . . . attempted to combine . . . what seem to me the essential features of a systematic introduction to metaphysics with those of a history of modern philosophy. . . . I hope . . . that certain features of the book may prove useful; in particular, the plan on which it classifies metaphysical systems, the summaries it offers as well of the arguments as of the conclusions of modern philosophers, the exact quotations and multiplied text references of its expositions. . . . In the main, this [the bibliographical and critical material] has been relegated, with the biographies, to the appendix of the book, that the continuity of metaphysical discussion may not be broken." So much from the preface; and then, as indicating the results attained, the noble statement with which the principal argument concludes: "We have ended one stage of our philosophic journey, for we have gained a vision of the truth as the monistic personalist sees it: the vision of a One which includes, without annihilating, the many, of an absolute self

who guarantees the individuality of the particular selves, of an eternity which transcends yet does not negate time, and of an immortality required by the deathless ideals of every moral self" (p. 455).

The type of thought is therefore evident. Miss Calkins's work is an introduction to metaphysics based on historical interpretation and leading to a systematic self-idealism. It is not an introduction to philosophy at large, for metaphysics, and metaphysics in the ultimate sense, forms its central theme, epistemology as well as the remaining philosophical disciplines receiving only incidental treatment. It is not 'introduction' in the sense of philosophical or even of metaphysical encyclopaedia, but in the sense of outlines, a reasoned system being accepted with conviction and advocated with critical ability. It is based upon an extended expository study of leading philosophers from Descartes to Hegel, since, in spite of the recognized difficulties of such analysis, it is held that 'the historical sequence of philosophies from Descartes's to Hegel's, seems to coincide, roughly, with a logical order' (p. vii). In opposition to the phenomenalist and agnostic tendencies of the day, the writer is convinced of the possibility of metaphysical inquiry and the value of its outcome. Among its problems three are considered of the utmost importance: first, the conception of reality as one or many, 'numerical monism or pluralism,' as the contrasting systems are happily termed; second, the interpretation of reality as the same as or as unlike consciousness, idealism *versus* 'non-idealism'; third, the interpretation of idealism in terms of selfhood, 'spiritualistic or personal idealism' (pp. 9-10).

This analysis of doctrine implies the classification of systems. Metaphysical systems are both numerically and qualitatively pluralistic (Descartes, Locke), or numerically pluralistic and qualitatively monistic (Hobbes, Leibniz, Berkeley, Hume); again, they are numerically monistic and qualitatively pluralistic (Spinoza), or both numerically and qualitatively monistic (Schopenhauer, Hegel); finally, of the qualitative monists Hobbes is non-idealistic, Hume is a phenomenalist idealist, Leibniz, Berkeley, Schopenhauer and Hegel are spiritualistic idealists. In general, this classification has unquestionable value, especially as it calls attention to the distinction, which is sometimes neglected, between qualitative and quantitative, or, as the writer better phrases it, numerical, monism. A question suggests itself, however, concerning the adequacy of the analysis. Does it fairly cover all 'the representative modern philosophers (through Hegel)' or even their strictly metaphysical conclusions? Professor Calkins explains the absence of Kant, Fichte and Schelling from her table 'on the ground that their systems, as internally inconsistent, fail to represent any one type of philosophy' (p. 10). But is not this tantamount to saying that the types of philosophy are too many and complex to be arranged according to any one principle of division? To the reviewer the conclusion seems evident, with regard either to metaphysical systems considered as such or to philosophical systems at large.

The historical and critical portions of the volume are written with a facile pen. Few recent treatises on philosophy have combined so constant reference to the sources with so readable an expository style. The writer exhibits, moreover, a comprehensive acquaintance with the history of modern thinking, at the same time that she exercises independent historical judgment. Suggestive, for example, is the classification of Spinoza as a qualitative pluralist because of his doctrine of the attributes (Chap. VIII., pp. 277, 288-293, 294-297), an interpretation which will be found of interest even by those who shall continue to adhere to the traditional view of the completeness of the Spinozistic monism. Less acceptable will prove the omission of Locke's work, considered as a repetition or restatement of the Cartesian dualism (pp. 111, 493); the failure to take adequate account of Berkeley's nominalism in Chapter V.; the depreciatory estimates of Kant (pp. 197-8, 272-3), etc., while as an example of minor corrigenda the restriction of Rousseau's principal works to the two 'Discourses' may be cited (p. 506). But the broader questions of interpretation lead into questions of doctrine as well. At this point unstinted commendation must be given to the spirit of Miss Calkins's work. Never has there been a fairer attempt to solve the difficult problem of evolving doctrine from historical analysis. Often the reader is warned in terms that the exposition of a given philosopher follows an order different from his own, or emphasizes positions which he himself did not consider of preeminent importance, or, as notably in regard to the 'phenomenalistic idealism' of Hume (Chap. VI.), includes principles which are logically implied in his own conclusions rather than advanced by him and definitely defended. Scientific conscientiousness is here complete, with in most instances results commensurate with the sincerity of the endeavor. Nevertheless, it is clear that in the end issues remain which may well be regarded in the future, as they have often been considered in the past, from points of view other than those which are adopted in the work before us. Many of these concern the central principles, idealism and selfhood. Thus in Chapter VI., which has just been mentioned, skeptical idealism is so firmly held inherent in Hume's system while, on the other hand, the existence of objects, even of finite selves and God, is evidently assumed in the course of his argument, that the hypothesis of bad faith is suggested as a solution of the contradiction (pp. 177-8, 191). Hegel supplies an example of the second problem; for in spite of such careful reasoning as that which is given in Chapter X. (especially pp. 382-389), it is possible still to question the analysis of the Hegelian absolute in terms of personal consciousness.

Concerning the systematic conclusions of the writer, judgment will also differ with the schools. It is at once refreshing and encouraging to find the self coming to its own again, after the dreary waste of philosophies, as well as psychologies 'without a soul.' And the fact gains in significance, when it is realized that it is psychologists of rank who are

anew emphasizing selfhood.¹ But will it not be necessary to give the doctrine the deepest possible grounding? And will it be possible to maintain the principle on the basis alone of immediate self-consciousness and the criticism of opposing positions (pp. 406-410 *et passim*)? Larger attempt is made to define the meaning of self and to meet the questions arising from the relations of the absolute self to the partial selves. In the final chapter this subject is developed in connection with contemporary discussions. Much in the spirit of Royce, the writer contends for the uniqueness and the inclusiveness of the absolute self in contrast to the 'pluralisms' of Howison, Rashdall and McTaggart. The problems which are involved in monism of this type are resolutely faced, and although it is not claimed that they are all elucidated, none are passed without careful consideration. In this way the argument advances from the existence of self, its nature and its relation to time, to the problem of freedom and the outlook toward immortality, concluding with the eloquent summary which has already been quoted. A. C. ARMSTRONG.

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Ethical Aspects of Economics. W. R. SORLEY. *International Journal of Ethics*, Vol. XVII., Nos. 1 and 3. Pp. 1-13; 275-290.

In the days of Mill and Carlyle there was a bitter controversy between economists and moralists, which arose from the failure, or, at least, the seeming failure, of the economist to recognize the continuity of the economic life with its social environment. To-day a problem fronts both economist and moralist, which arises from the full recognition by the economist, as well as by the moralist, of that continuity which before was in question. The ethical aspects of economics are two: the first is the fact of that continuity just mentioned; the second is the problem that arises in and from that continuity.

Dealing with the first of these ethical aspects of economics, Mr. Sorley classifies the moral influences which enter into and modify the production and distribution and consumption of wealth under three heads: mental processes, the forms of social life, and the system of law declared and enforced by the state. In the first of these fields, for example, it is impossible to suppose man actuated merely by the desire for wealth even in the pursuit of wealth. On the contrary, that pursuit is largely actuated by motives that are ethical, by the sense of duty, and by ideas of good and evil. Economic facts are imbedded in a larger mass of facts, mental, social and legal, among all of which the ethical facts have an important place. The economic man or the economic state is a mere figment or hypothesis.

The second and more important ethical aspect of economics may be resolved into the relation which exists between the concept of value in exchange, or extrinsic worth, on the one hand, and worth proper, or intrinsic worth, on the other. The term *value*, as the economist uses it,

¹ Cf. with Miss Calkins's argument in this work and in her more distinctively psychological treatises, Chap. XII. in Judd's 'Psychology,' recently published.

is always value in exchange, and is commonly stated in terms of money. But money itself is a value in exchange. Therefore, in attempting to state the value in exchange of any commodity in terms of money, we are landed in a *circulus in definiendo*. Either this fact is overlooked by the economist or he hopes to escape by employing such terms as *value in use* or *utility*. It is, however, necessary to recognize that the only escape from the circle of values in exchange, or extrinsic worths, is found in reference to an intrinsic worth, which is entirely independent of exchange. And we must also note that the intrinsic worth of things can not be determined by the economic method. Many things that have great intrinsic worth, a good conscience, for example, have no extrinsic worth, no economic worth at all.

This distinction between extrinsic and intrinsic worth enforces the essential dependence of economics on that science which deals with intrinsic worth, the science of ethics. And Mr. Sorley proceeds to define the purpose and methods of ethics, considered from this point of view.

The leading conception of ethics is that of intrinsic worth, or goodness. It raises the question what a thing is really worth, not merely what it has, as a matter of fact, been worth to this man or that. This real worth is a matter, not of fact, but of ideal. However serviceable the historical study of the social facts of morality may be, that study must be looked on as subsidiary to the determination of the validity of standards of worth. That validity, which is the primary concern of ethics, can not be determined either by the permanence of those standards—the conservative fallacy, or by the tendency of those standards—the radical fallacy. It is not to be assumed that that which has most worth either has existed or ever will exist.

These considerations naturally lead the economist to ask on what basis ethical science does base its conclusions, by what method it actually determines the real worth of things. There are, says Mr. Sorley, two ways. Ethics is one of those sciences that look on life as a whole; it takes into consideration all worths whatever. And it aims to establish a system of moral judgments which shall cover the whole of life and be free from internal contradictions. The first method, then, rests its conclusion on the *scope* and the *coherence* of the system of judgments.

The second method is the appeal to the moral judgment of the good man. "The opinion of the good man on a question of conduct appeals to the average man with a conviction and intimacy which the opinion of the clever man on a question of science does not produce."

PERCY HUGHES.

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Les expressions extérieures et profondes des émotions chez l'homme et les animaux. FRANÇOIS-FRANCK. *Bulletin de l'Institut Général Psychologique.* April-June, 1906. Pp. 83-94.

M. Franck gives an interesting account of emotion as derived from secondary and representative stimulation. His presentation is good in

itself, though his contention that the James theory is incorrect seems hardly to hold. We are referred to figures in the course of the discussion, but as they are not printed in the text we must imagine them as he refers to and explains them verbally. M. Franck supports a theory somewhat different from the celebrated James exposition and speaks of 'cerebral surprise' and 'psychic shocks,' which result, on the one hand, in external expression and, on the other hand, in deep organic changes (p. 84). He refers to curves tracing such organic changes and to photographs taken simultaneously with such tracings and showing the external emotional expression. Such charts must be of great interest, and should have been published in the text. On the side of external expression we find typical emotions represented by certain facial types. On the side of organic changes we have those in the respiratory and in the circulatory systems. In respiration, during an emotion, we have an action of contraction, of bronchial spasm, which tends to stop air from entering the lungs. This occurs at times in public speaking when the speaker seems unable to proceed. In the action of the heart we may have a phase of acceleration or one of arrest.

It is upon such deep organic changes, due to cerebral excitation, that the emotion depends. The brain is the point of departure of the whole (p. 93). No emotion, so says M. Franck, can arise from any circulatory or other changes which do not come from cerebral excitation. M. Franck's presentation seems to have been well received, as at the end we have the note 'prolonged applause.' I think, however, that the James theory will still hold good. The question at issue is that which is concerned with what is felt during an emotion, rather than with what causes the bodily disturbance. Whatever occurs, whether it be of peripheral or central origin, if this be felt as emotion, it will fit in full the facts as set forth in the James theory. I might add that it is just these very organic changes upon which James lays so much stress. He does not, as M. Franck seems to suggest, consider only surface excitations.

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NEW YORK CITY.

JOURNALS AND NEW BOOKS

MIND. January, 1907. *The Time Quality* (pp. 1-26): HENRY RUTGERS MARSHALL. - The appreciation of time is due to the existence of a three-phased quality of all presentations. The past is characterized by the simplification of complexity, the future by the development of complexity and the present by lack of marked development, or simplification. Presentations are 'psychic emphases' and may be referred to past, present or future. The whole presentation of any moment is a complex of multiple emphases and so a highly complex system of psychic systems. *A Criticism of the Psychologist's Treatment of Knowledge* (pp. 27-53): H. A. PRICHARD. - Psychologists get a false start from Locke and Berkeley. They treat 'knowing' as a special kind of object instead of as that which

is opposed to an object as the apprehension of it. They state the subject side of a subject-object relation as if it were the object side. Mental facts can not be explained genetically, for mental processes are ultimate like space, time and colors. It is understanding, and not explanation, which is required, and so Plato and Aristotle give the best psychology. *The Structure of Reality* (pp. 54-69): GERALD CATOR.—Reality is a graded logical system. The absolute exists and knows, and the not-absolute is also real, but while the absolute exists necessarily, the not-absolute does not exist necessarily, but is caused to exist by the will of God, the absolute. *Image, Idea and Meaning* (pp. 70-100): R. F. ALFRED HOERNLÉ.—The author complains of current confusions of these terms. 'Sign' and 'meaning' are inseparable for both logic and psychology. The distinction between them is not equivalent to that between 'idea' and 'reality.' And the distinction between 'idea' and 'reality' is not the distinction between mental facts which have meaning and mental facts which have no meaning. It is also false that what we apprehend ideally can not, as such, be real. The word 'idea' has a double usage, to describe (1) a qualitative difference in the content of experience and (2) a qualitative difference in the mode of experiencing a content. These distinctions are applied to facts of volition. *The Conception of the Unknown in English Philosophy* (pp. 101-117): T. M. FORSYTH.—The development of this concept in connection with the concept of experience shows us that the known always implies the unknown, and the two regions are continuous. *Critical Notices* (pp. 118-137): John I. Beare, *Greek Theories of Elementary Cognition from Alcmaeon to Aristotle*: G. R. T. ROSS. George Santayana, *The Life of Reason: or the Phases of Human Progress*: H. BARKER. George Trumbull Ladd, *The Philosophy of Religion*: G. GALLOWAY. *New Books* (pp. 137-152). Thomas Marshall, *Aristotle's Theory of Conduct*: JOHN SIME. *Studies in Philosophy and Psychology, by Former Students of Charles Edward Garman*: R. F. ALFRED HOERNLÉ. John Denham Parsons, *The Nature and Purpose of the Universe*: DAVID MORRISON. George Galloway, *Studies in the Philosophy of Religion*: ALLAN MENZIES. Joseph Rickaby, *Free Will and Four English Philosophers (Hobbes, Locke, Hume and Mill)*: G. GALLOWAY. Norman Alliston, *Reconnoitres in Reason and the Table Book*: D. M. Thomas D. Savill, *Clinical Lectures on Neurasthenia*: W. L. M. A. Marie, *La Démence*: W. LESLIE MACKENZIE. Charles Blondel, *Les Auto-mutilateurs: étude psychopathologique et médico-légale*: W. L. M. Von Hans Dreyer, *Personalismus und Realismus*; P. H. Ritter, *Schets eener critische Geschiedenis van het Substantiebegrip in de nieuwe Wijsbegeerte*: J. P. K. *Philosophical Periodicals. Notes.*

Forel, August. *Hygiene of Nerves and Mind in Health and Disease.* Authorized translation from the second German edition by Herbert Austin Aikins. New York and London: G. P. Putnam's Sons. 1907. Pp. x + 343.

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NOTES AND NEWS

THE following summary of the paper on 'Philosophical Education,' read on June 3 by Mr. Benjamin Dumville before the Aristotelian Society, is from the *Athenæum* for June 15: "In education, practise can not always wait for theory. Often, therefore, the 'practical' man despises theory. Tradition and expediency become the arbiters. But pure theory must base itself upon firm foundations. We must demand the *why* of both tradition and expediency; in other words, we must appeal to philosophy. The nature of one's ultimates, however, has far-reaching effects on educational theory. Spencer's order of importance of knowledges is very different from Aristotle's. In face of such contradictions many writers on educational theory fly back to the empirical sphere; but their 'principles' lack consistency, and lead to contradictions. In morals, for instance, we are told both to educate to the standard of the moral order around us, and also to set before us the highest ideal. The former recommendation makes room for worldly 'tact'; the latter indicates that 'truth is the outcome of all thought and good of all action.' Plato, in his 'Republic,' has given us an example of an educational system founded on a philosophy. He accepted the higher ideal; but he could ignore the practical side of life. We can no longer do so. If, then, we are to remain philosophers in education, we must elaborate a system of philosophy which takes into serious account all phases of life. This has been attempted by Dr. Rashdall in his 'Commensurability of all Values' (*Mind*, April, 1902). But most modern systems of education are framed in the dark, lacking philosophical guidance. The 'humanists' (*e. g.*, Sturm) largely follow tradition. This leads to stagnation—mere reverence of the past. The 'realists' (*e. g.*, Comenius and Spencer) take account of modern activities, but lack any true philosophical ground. The 'naturalists' (*e. g.*, Rousseau) carry 'development' to an extreme. Education, however, is not mere development; it is *training*, and training implies an end which the educator has in view. A new school has arisen—called

by Mr. O. Browning the Scientific or Metaphysical School. Herbart is its chief representative. He founds his education on a philosophy which he elaborates. This philosophy exhibits certain weaknesses which are naturally reflected in his pedagogy. The derivative nature of will in his psychology is paralleled in his pedagogy by inordinate sacrifices to the doctrine of interest. The vagueness of his ethics corresponds to the uncertainty which many educators feel with regard to the efficacy of a many-sided interest in securing morality. Enough has been said to show the deep connection which exists between philosophy and educational theory. Although compromise will always be necessary in practise, we ought not on that account to give up serious reflection on theory. The diversity of the inquiring is to be preferred to the unanimity of the ignorant. We can not, perhaps, hope with Plato for a race of philosopher-kings, but we are not expecting more than is reasonable in looking forward to a generation of philosophical directors of education."

THE checking of statistics by taking account of the personal equation has not hitherto been attempted, but Mr. Yule, writing in the *Journal of the Anthropological Institute*, expresses the belief that the personal equation is apt to mar seriously the results of statistical reports in matters of ill-defined qualities. He distributed among thirty-four unusually intelligent observers a number of cards of sixteen different shades of color, each card having two tints. The subjects were requested to record the colors, distinguishing, first, light from dark; secondly, light, medium and dark; and then making five discriminations. The observers were found often to contradict themselves, and more often to contradict one another. Mr. Yule is of the opinion that in matters where discrimination and identification are more difficult, such, for example, as in mental and moral qualities, greater inconsistencies will result. It resulted to a small degree—not quite 2 per cent.—from the presence of two shades on one card that observers placed both in one class instead of in different classes.

THE General Board of Studies of Cambridge University recommends that the present lectureship in physiological and experimental psychology be not continued, but that in its place two lectureships be established, one in the physiology of the senses in connection with the special board for biology and geology, and that the annual stipend of the lecturer be £100; the other in experimental psychology in connection with the special board for moral science, and that the annual stipend of the lecturer be £50.

THE following changes have been made in the department of psychology in the University of Illinois: Dr. Stephen S. Colvin, associate professor, has been advanced to a professorship and Dr. John W. Baird, instructor, to an assistant professorship; Dr. Fred Kuhlmann, assistant in psychology at Clark University, has been appointed instructor. The department has been assigned new and enlarged quarters in the addition to the Natural History building, which will be ready for occupancy in September, 1908.

PROFESSOR WILLIAM JAMES has been elected a corresponding member of the British Academy.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

PROLEGOMENA TO A TENTATIVE REALISM

IN an article recently published in this JOURNAL¹ I tried to show that psychology presupposes an awareness distinct from the 'objects' of awareness and that this awareness is aware of itself as aware, as well as aware of what are usually called 'objects.' In some subsequent article I hope to examine the arguments brought forward to disprove the existence of such an awareness, but meanwhile I shall assume that there is such a thing as awareness distinct from 'objects' and proceed to examine the bearing of this fact, provisionally assumed, upon the tenability of realism.

Let me begin with a typical experience. Suppose that while I am having an experience of red, say of a postage-stamp on my desk, my attention is distracted by a disturbance outdoors and that I turn my head away from the desk to look out of the window. Meanwhile a friend, with whom I have been discussing the stamp, keeps his eyes fixed on it. Presently I return to the interrupted discussion, look again toward the desk, and thus get the red a second time as object of awareness; and when I do so I am also aware that there has been an interval during which the red has not been an object of consciousness. My friend, however, informs me that he has been examining the stamp all the time that I was diverted by the dog-fight. In view of his assurance, I now think of the red as having been a fact in his experience when it was not in mine. It existed as red when it was not in my experience as one of the immediate objects of that experience. It was red in spite of the fact that it was not red for me, red for my awareness. I thus distinguish between red for my consciousness and red that was not for my consciousness while yet it was red. The red existed in 'independence' of my consciousness.

Of course, in this case I have described, the red, while it was not found in my experience, was an object of another's experience. Now let us proceed to another case, where both that other person and I myself cease to see the red and even to think of it. We two go out of the room, and as we depart, a third person enters, sees the stamp

¹ 'The Stream of Consciousness,' Vol. IV., p. 225.

and, subsequently joining us, tells us what he saw. Still, again, a fourth person reports to us that he saw the stamp when he was alone in the study, and that he has just come from the study, leaving no one behind. We begin conversation on other matters, and half an hour later some one says, "But about that stamp," and enters upon a philatelic disquisition, which, as Mr. Kipling would say, is another story. Our present interest is in the red of that stamp during the half hour when, so far as any one knows, no consciousness gave it a visible means of support. Was there any red in that interval, or does the assertion that there was mean merely that *if* any one had been in the study there *would have been* a red for him?

If I were to say that what can exist apart from my consciousness and also apart from the consciousness of *B* and of *C* and of *D* must also exist apart from all consciousness, I should be told that I was committing a gross fallacy. The rebuke would be deserved. And yet logic does not forbid us to conceive the possibility of the truth of a *dictum simpliciter* when the *dictum secundum quid* is true. It merely forbids the passage from the latter as premise to the former as foregone conclusion. The latter is not proved by the former, but surely no logician would dare say that it is disproved thereby. The truth of the *dictum simpliciter* remains an open question with a meaning. If so, why may I not say that there is meaning in the question whether the red of the stamp, when no one sees it, is still red? A thing that has a way of passing from one consciousness to another, and of presenting itself to several consciousnesses at the same time, arouses the suspicion of being independent of any consciousness.²

²To obviate misunderstanding at the outset, I wish to say that by 'independence' I do not mean what Professor Royce understands the thoroughgoing realist to mean by 'independence.' Professor Royce maintains that the resolute realist is committed to the view that if a meteor is real in his realistic sense, its 'mass, extension or other primary qualities' 'would remain real if there never were any knowledge in the world' ('The World and the Individual,' First Series, p. 200). This may be true of certain realisms, but in regard to such I agree with Professor Royce that if their 'realistic definition of being' is 'simply and rigidly applied,' it 'destroys its own entire realm, denies its own presuppositions, and shows us as its one unquestionable domain the meaningless wilderness of absolute nothingness.' But the realism which I am trying to study out to its ultimate implications is not a realism that tells us what would be the character of a world in which there is no consciousness anywhere throughout its whole temporal and spatial extent. It speaks of *this world of ours*, which has consciousness in it, seemingly as a 'function' of certain brain-states. By the 'independence' of an object I do not mean that the object would exist if this world were mindless from start to finish, assuming there be start or finish. If this world were from everlasting to everlasting without mind as a constituent part of it, it would be so different from what it is that I do not know whether

But, of course, the opponent of realism will not let me off so easily. He would reply that I beg the whole question in saying that the *same* object presents itself to several consciousnesses and passes from one consciousness to another. He would say that it is of the very essence of red to be perceived. Red is a perception and nothing but a perception, and that is the end of it. Its *esse* is *percipi*, and there are as many reds as there are awarenesses of it. The obvious reply to such a statement is, that saying so does not make it so. The view that the *esse* of color is *percipi* is not *prima facie* the true view. The 'plain man,' unsophisticated by science and by philosophy, does not see in the essence of red anything that involves the necessity of its being perceived in order to be. Of course, the 'plain man's' view is not final in this matter, any more than in any other matter; but his naïve attitude shows that it is a perfectly possible feat of thought to regard red as capable of 'independent' existence, and that there is nothing in red as it is *seen* which points incontrovertibly to its 'subjectivity.'

The belief in the subjective character of red is a thing that has had a history, and fortunately we can examine the reasons that have led to the present wide-spread opinion among scientists and philosophers that red can not be red except when there is an awareness of it. In one important point the matter is on all-fours with the Copernican theory of astronomy. This theory is not proved

with the absence of mind there might not also be the absence of everything else. At any rate, the most confident assurance I can allow myself to entertain about such a world is that in it there would be no realist to make absurd philosophical statements in unreal conditional propositions, and no Professor Royce to point out these absurdities with consummate dialectical skill.

Definitively, therefore, I refuse to discuss the philosophy of such a mindless world. If I were so foolish, Professor Royce would in this world show up the folly, as folly goes in this world, for his dialectic in this matter is relentless. In this paper I am speaking of *this* world, where I believe that there are minds, or consciousnesses, at least in spots, and where the question is whether there are any objects existing in other spots. More specifically, the 'independence' spoken of in this paper is temporal independence, not 'absolute independence.' By 'temporal independence,' again, I mean existence at a time when there is no awareness of what thus exists. Of course, what is thus 'temporally independent' is in another sense temporally dependent—i. e., in the sense that being *in* the same time, though not *at* the same time, there is relation between the awareness existing at one time and the object existing at another time, which relation can be expressed in terms of logical dependence. I venture to think that such a conception of being does not fall under any one of the 'Four Historical Conceptions of Being' which Professor Royce discusses with such power and persuasiveness. But at the same time I believe that this conception of being is an historical conception, older than any of the others, and more persistent. Perhaps it is too naïve to be treated of in Gifford lectures.

these days by saying that it is the essence of the sun to be the center of the solar system. Nor is it proved by saying that all learned people believe it to be the center of that system. The theory is proved by just the very arguments that have led the learned to their belief. Any one is at liberty to examine these arguments, and if he sees a flaw in them he can afford to dispute the conclusion. Fortunately the same thing is true of the arguments for the subjectivity of colors and temperatures and everything else that it is now the fashion to regard as definitively subjective. The arguments are matters of history, known and read of all men. If these arguments are not cogent, then no appeal to the essence of red as a mere perception, or to the common belief of the initiated, will convince any one who is not joined to the idols of essential forms or to the idols of the market-place.

These arguments I propose to examine in subsequent articles, but before doing this, I wish to do two things: first, to examine two sophistries that have been very common in discussions of realism; second, to study the possible meanings of the term 'sensation' and to fix these meanings by the use of distinctive terms, so that unnecessary confusion may not result in the treatment of what is at best an intricate problem.

The first sophistry that I wish to expose is that which attributes to the realist the assumption of two numerically different objects, the perceived object, and the unperceivable object lying forever beyond the field of awareness.

I think that I have shown that except for those who will appeal, as to a final tribunal, to the essence of red as involving its presence to awareness, there is meaning in the question whether red can exist when not perceived. Now I wish to say that it is not necessary to suppose that, if such a conceivable red really exists when unperceived, it must exist double when perceived—once as the perceived red and once as the unperceived red. Of course, if the red that is perceived is merely a 'perception' and can not exist except 'in consciousness,' then any red which one might conceive as existing beyond the perceived red would necessarily be a second red, numerically distinct from the perceived red. The perceived red could at best be only a duplicate or copy of the red that is 'out of the mind.'

But we must not mix up what would follow if red is merely a 'perception' with what would follow if red should prove to be an independent reality. This confusion is constantly met with in the writings of those who argue against the independent reality of perceived qualities. Thus Berkeley, in one of his arguments

for idealism, assumes that the realist maintains that 'though the ideas themselves do not exist without the mind, yet there may be things like them, whereof they are copies or resemblances, which things exist without the mind in an unthinking substance.'³

In refutation of such a contention, Berkeley says that "an idea can be like nothing but an idea; a color or figure can be like nothing but another color or figure. If we look but never so little into our own thoughts, we shall find it impossible for us to conceive a likeness except only between our ideas. Again, I ask whether those supposed originals or external things, of which our ideas are the pictures or representations, be themselves perceivable or no? If they are, then they are ideas and we have gained our point; but if you say they are not, I appeal to any one whether it be sense to assert a color is like something which is invisible; hard or soft, like something which is intangible; and so of the rest."³

Professor Strong argues in a similar manner in opposition to the realist. He thinks that for the realist "there are really *two* material worlds, one accessible to touch and vision, and another lying concealed behind it. . . . It can not but strike us that worlds have here been multiplied *præter necessitatem*."⁴ It does look that way on this representation, but the multiplication has been performed by the idealist in his inability to see anything but through the distorting lenses of his idealism.

There is surely another course open, lying between the doctrine that everything that is perceived is a 'modification of consciousness' and beyond such 'modifications of consciousness' there is nothing, and the doctrine that everything that is perceived is a 'modification of consciousness' and beyond these 'modifications' there is something like them in quality, but forever inaccessible to consciousness. It is perfectly permissible to conceive the object of vision as being not a 'modification of consciousness' at all, but as the real thing; in this case there is no duplication of worlds *præter necessitatem*. This is the view of the naïve man, and, as we have seen, there is nothing antecedently improbable in it. It may prove to be a mistaken view, but there is no contradiction in the terms of it.

This third course is generally completely ignored by idealists. They assume that there is no question that our perceptions are 'states of consciousness,' and therefore ideal. Now if consciousness is to be distinguished from its objects, as I have maintained, then it is improper to call the object of consciousness in perception, or any

³ 'A Treatise concerning the Principles of Human Knowledge,' § 8.

⁴ 'Why the Mind has a Body,' p. 178.

other object of consciousness for that matter, a 'state of consciousness.' There are no states of consciousness in any proper sense of the term. Consciousness is always similar in character, whatever be its objects. Consciousness does not change its character from what it is when a sense quality is its object, to become another kind of consciousness when later there is an emotional reaction upon this sense quality. It remains the same qualitatively similar consciousness throughout the time within which qualitatively different objects are presented to it. What is usually called a state of consciousness is either an object of consciousness or a state of such object. It may very well be that some of these objects exist only when there is an awareness of them; for instance, we have no reason for supposing that pleasure ever exists except as there is an awareness of it. But this does not make pleasure a state of consciousness, any more than the fact that color does not exist except as it is extended makes color a state of extension.

Now those objects of consciousness which can exist, so far as we know, only as there is an awareness of them, we may call 'subjective'; other objects, which there is reason for believing to exist when there is no awareness of them, we may call 'objective.' But we may not argue that because these two classes of objects are alike in being objects of consciousness when we are aware of them, therefore what is true of the one class, namely, its subjectivity, is also true of the other class. This is exactly what is done when we call everything 'a state of consciousness,' and then suppose that we have proved idealism true.⁵

Now if idealists would only bear in mind that realism can regard things as, indeed, at times objects of consciousness without thereby becoming 'states of consciousness,' they would save themselves the trouble of constructing a fallacious dilemma with a view to impaling realists upon one of its horns. But they will not bear this in mind, hence they keep on saying in complacent self-satisfied tone: "The same red can not be both in and out of consciousness; but the red we see is admittedly in consciousness; therefore if there is a real red independent of consciousness it must be another red. For how can the red we see be at the same time the red we do not see?" If they would only stop their iterations and reiterations long enough to give themselves time to examine the realist's position, they would see that all they are saying amounts to the asser-

⁵ Of course, there is need of further discussion as to the nature of consciousness, as it is treated in the above remarks. For instance, consciousness is an abstraction, but it is none the less real for being so. Color is an abstraction, but I do not think that any man in his senses has ever supposed that this fact abolishes color out of the universe. But into these matters we must not go here.

tion that if the realist would only concede to the idealist the truth of the idealistic contention, then the realist could not consistently maintain something that is at variance with that conceded truth. The idealist thus begs the question as naively as ever the plain man does, whom the idealist despises so much. The idealist assumes that the red we see can not be independent of the seeing (which is, of course, the point at issue), and then he finds it easy to prove that if there is an independent red, it must be a numerically different thing from the red we do see.

Now, it can easily be seen that if the idealist would only treat the realist's conception as he would treat anything else, he would never say, as Professor Strong says: "If we start from the realistic assumption of an object existing independently of consciousness, the conclusion to which we are driven is that this object and our perception of it are distinct and separate things. There are really, on this assumption, two candles: the candle that is extramentally real, and the candle that is a mental modification. They differ in a variety of ways, one being permanent, the other transient; one made of matter, the other of mind-stuff, etc. Being distinct and separate, each can exist without the other."⁶ On this principle Mr. Strong as professor of psychology and Mr. Strong as playing golf are two gentlemen; they differ in a variety of ways, one being permanent and the other transient; one addressing his classes, the other addressing his ball, etc. Being distinct and separate, each can exist without the other!

Now Locke expressly duplicated the object; but Professor Strong gives us no warning that he is dealing with realism of the Lockean type alone; he represents realism as being in general, especially in its naïve form, unqualifiedly committed to duplicating the object. It is only because Professor Strong supposes that the realist would cheerfully make certain idealistic admissions that the duplication of objects is foisted on the realist.

But the idealist returns to the fray, when he has been foiled in his attempt to down the realist with this sophistry; but he only brings another sophistry to accomplish what the first failed to accomplish. He tries his hand at another misinterpretation of his opponent's position. 'The realist will surely be kind enough to admit that if we see the independent red, then that red is both in and out of consciousness at the same time. That it is in consciousness when it is seen, no one can doubt; and that it is out of consciousness is just the gist of the realist's contention.' The realist, even at the risk of seeming unaccommodating, refuses to admit that

⁶ *Op. cit.*, p. 185.

the real red he is contending for is both in and out of the mind *at the same time and in the same sense*. When the real red is in consciousness, it is in consciousness; and when it is out of consciousness, it is out of it. Its independence of the mind only means that it is not necessary for it to be in the mind in order to be at all, and also that while it is in one mind it may also be in another. The independent thing does not exhaust all its being in being perceived by one mind.

Put this way, there is no more contradiction in the assertion that the same object can be both in and out of the mind at the same time than in the assertion that the same person can be father and son at the same time. The particular respect in which a man is father is not the same particular respect in which he is son; so the particular respect in which red is in consciousness is not the same particular respect in which it is not in consciousness. As Bradley has well observed, "Contradictions exist so far only as internal distinction seems impossible, only so far as diversities are attached to one unyielding point assumed, tacitly or expressly, to be incapable of internal diversity or external complement"; and, "There is only one way to get rid of contradiction, and that way is by dissolution. Instead of one subject distracted, we get a larger subject with distinctions, and so the tension is removed."⁷ The idealist maintains that the realist's red is 'one unyielding point,' while the realist maintains that his red, like anything else we can think of, may be capable either of internal diversity or of external complement, may be a larger subject with distinctions.

There are other sophistries frequently appearing in the course of arguments for idealism, but I think that those I have mentioned are the most common and the most generally overlooked. Professor Strong's writings will convince any one that the idealist can get intense satisfaction in rolling them as sweet morsels under his tongue.

Let us now proceed to examine the distinctions I referred to as necessary to be recognized before at least one kind of realism can be understood and intelligently estimated.

There is no word in modern philosophical literature which is more ambiguous than the word 'sensation,' and yet many writers use it with as much confidence in its constancy of meaning as the geometrician reposes in the symbol π . Thus Professor Strong says in one place that 'if it were possible for us to know that objects exist whether perceived or not, we might know them to be independent of the mind, and *they could not then be composed of sensation*."⁸

⁷ 'Appearance and Reality,' pp. 566-7 and 192.

⁸ This JOURNAL, Vol. I., p. 549; italics mine.

Here it is arbitrarily assumed that sensation can mean only one thing, namely, the 'modification of consciousness' which accompanies the brain-event initiated by an external stimulus applied to a sense-organ.

If this be merely a matter of words, it is not worth spending our time on it. But opponents of realism often use the fact that sensation means for them just 'sense qualities while appearing in consciousness' as a kind of sacred and inspired revelation that what we are aware of in such sensation must be subjective. They apply the hagiograph 'sensation' to a thing, and forthwith the thing becomes ideal in its nature: Reality is in its mental temple, let all the realistic world keep silence. This is just what such words as these imply: "*Sensation presents to us an object that is real and present, but that object is not distinct from the sensation.*"⁹

It is not thus that a great psychologist writes of sensation. "When we adults talk of our 'sensations' we mean one of two things: either certain *objects*, namely, simple *qualities* or *attributes* like *hard, hot, pain*; or else those of our thoughts in which acquaintance with these objects is least combined with knowledge about the relations of them to other things."¹⁰ According to this statement, which seems to me to express the truth in the matter, there are at least two things to be distinguished in every 'sensation' of an adult. There as a *sensum* (quality or attribute), and there is a *sentire* ('thought,' as Professor James calls it; I should prefer to call it awareness). Not that *in sensation* these facts are separate; they exist together in a concrete unity, wherein they can be distinguished. They are two aspects of an undivided whole. Now if this be so, I think we should, for the sake of clearness, recognize that sensation may mean, not merely *sensum* and not merely *sentire*, but also the whole of which *sensum* and *sentire* are aspects; sensation therefore means also *sentire-sensum*.

Over against this, and with explicit rejection of this distinction, Professor Strong maintains that 'the object is not distinct from sensation.'¹¹ From sensation in what sense? Obviously, in the

⁹ This JOURNAL, Vol. I., p. 549. As in many other hagiographa, we have here a sentence that charms the ear with its mystery of meaninglessness and assumption of unfathomable profundity. If it could be interpreted by ordinary standards it would mean: 'the object presents to us an object that is real and present,' or 'sensation presents to us a sensation that is real and present.' This, of course, would be flat; hence we must begin by distinguishing sensation and object, in order to get a giver and a gift, and then we cancel the distinction in order to get idealism.

¹⁰ James, 'Principles of Psychology,' II., p. 3.

¹¹ So Berkeley maintained that 'in truth, the object and the sensation are the same thing and can not therefore be abstracted from each other' ('Treatise,' § 5).

sense of *sensum*; obviously, not in the sense of either *sentire* or of *sentire-sensum*. But the dictum once uttered is forthwith used as an axiom in the 'obviously not' sense. Of course, if no distinction can be made between *sensum* and *sentire*, then Professor Strong's identification of sensation with *sensum* and his ignoring everything else are justified. Professor Strong says that he regrets he can not recognize the distinction. The contention then narrows down to a question of fact: Is there a clearly recognizable distinction between *sensum* and *sentire*? I have tried, in an article already mentioned, to show that the distinction is obvious. In a later article I shall try to show that, unless the distinction is recognized, any attempt to understand the world of experience lands one in absurd paradoxes. Meanwhile I will leave the matter to the discrimination of the reader.

Now if it is proper to distinguish *sensum*, *sentire* and *sentire-sensum*, the realist maintains that these distinctions give an intelligible realistic meaning to the term Professor Strong uses so frequently, namely, 'possible sensation.' If *sensa* are sense qualities or attributes like hard or hot, then why may not *sensibilia* be just these same sense qualities when existing apart from any *sentire*? If *sensum* is sense *datum*, then why may not *sensibile* be sense *dandum*? And why may not such a *dandum* exist before it becomes a *datum*, much as a toy which I buy a week before Christmas exists as a *dandum* till Christmas Eve, when it becomes a *datum*? This change from *dandum* to *datum* does not make the toy any more real. Its nature has not changed, its reality has not changed, in ceasing to be a mere *dandum* and becoming a *datum*. The only change is in its relation to the lad. So the realist maintains that red may be real before it is 'given' or 'presented' to any *sentire* as a *sensum*. If this contention be valid, then just as the toy *qua dandum* and the toy *qua datum* are the same toy at different times and in different relations, so the *sensibile* and the *sensum* may be the same quality at different times and in different relations.

Resuming our results, we may say that the term sensation is an omnibus term, meaning either *sensum*, or *sentire*, or *sentire-sensum*, or even *sensibile*,—the last when we speak of 'possible sensation.' We shall need these distinctions kept clearly in mind in our further study of realism as a tenable theory.

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THE PRAGMATIC VALUE OF THE ABSOLUTE

IN these days when the idea of the absolute is looked upon with such suspicion by pragmatic philosophers, it may seem presumptuous for a layman to venture a word in its defense. I well recall an evening's conversation with a friend of mine, himself a pragmatist of no mean repute, to whom, after he had endeavored to convince me by manifold arguments of the utter uselessness of the idea, I addressed the question, how, if the absolute was so empty a concept as he maintained, it was possible on pragmatic principles to explain its existence at all. His answer reminded me of the remark of an old teacher of mine—a Calvinist of the straightest sect—who, after he had been demonstrating for an hour to a seminary class the philosophical untenability of Arminianism, was asked by one of his students: "Doctor, if what you say is true, how comes it to pass that there *are* any such people as Arminians?" The professor stopped, a puzzled look came over his face, which presently dissolved into that genial smile which some of his old pupils remember so well, as he answered: "Well, that is a pretty hard thing to explain. Apart from the fact of innate depravity, I don't know that I can account for it."

It is, therefore, no slight relief to those who, like the present writer, have been accustomed to assign to the idea of the absolute a practical value, to hear from the mouth of Professor James, the authoritative spokesman of pragmatism, that they have not been wholly wrong. In his recent Columbia lectures, Professor James frankly admits that, like every other human concept, that of the absolute owes its existence to a subjective need and performs a useful function in the lives of those who hold it. Whether the value which he assigns adequately describes the absolutist's experience is a matter presently to be discussed. Here it is enough to note the fact of the recognition. *De gustibus non est disputandum*. In the realm of value judgments *a priori* considerations are ruled out of court. If Professor James has discovered in the idea of the absolute one value which his fellow pragmatists have thus far apparently overlooked, it may not be impossible that men differently constituted may find in the term yet other values which Professor James has not yet adequately recognized, or, at least, adequately expressed. And the purpose of this article is to suggest one such possible value and to illustrate it by a concrete example.

And first, a word of preliminary definition. By the absolute I understand that conception of the ultimate reality which results when the element of contingency has been wholly banished from one's view

of the world. As distinct from a pluralist, the absolutist is a man who believes that all the facts of life can be reduced to an ultimate unity. He may conceive that unity in very different ways; but whatever his theory in detail, he is convinced that there is nothing in the universe which is not finally reducible to a single principle; nothing which is not dependent upon and explained by that ultimate reality in which he finds the final explanation and meaning of life. This, I take it, is substantially the conception of the absolute which the pragmatists have in view when they attack the philosophy of its defenders as practically dangerous and ethically unsound. They tell us that the man who tries to reduce all life to an ultimate unity, can do so only by emptying some of the phenomena of the world of present experience of their plain and obvious meaning. He must explain away the facts of suffering and of sin which have given life its tragic meaning and its grim intensity. He must persuade himself that whatever we do, the end is predetermined from the first, and therefore our petty contribution to the world's total of achievement is a negligible quantity. Such a view necessarily cuts the nerve of moral effort. If we are really to be the strong men the world needs we must get rid of this paralyzing shadow of the absolute, this enervating sense of certainty. We must feel the moral issues which hang upon our own action and be persuaded that we ourselves are sovereigns of our own fate.

It would seem, if this account of the matter be a true one, that our first duty in life should be to get rid of the absolute altogether, and this is indeed the attitude of many pragmatists. *Delenda est Carthago* represents the mood in which they have hitherto approached this 'Giant Despair' of philosophic thought. But Professor James's attitude is more impartial. He recognizes that such an easy solution is unpsychological. If the notion came into being at all it must be because at some time it fulfilled a useful function in human life, and, if it continues to be an active power in men's lives, it is at least a fair presumption that it fulfills a useful function still.

And this, as a matter of fact, according to Professor James, is what we find to be the case. There is a class of minds, 'most respectable,' if misguided, who find a kind of religious comfort in the idea, in spite of its 'remoteness and abstractness,' and, so far as this is the case, we must admit that the idea has a certain pragmatic value.¹

But Professor James goes farther than this. He not only admits that the idea of the absolute has a pragmatic value; he shows us what it is. When our friends of the absolutist faith tell us that they find comfort in the idea, "they mean that since in the absolute finite evil

¹ 'A Defense of Pragmatism,' *Popular Science Monthly*, April, 1907, p. 361.

is 'overruled' already, we may, therefore, whenever we wish, treat the temporal as if it were potentially the eternal, be sure that we can trust its outcome, and without sin dismiss our fear and drop the worry of our finite responsibility. In short, they mean that we have a right ever and anon to take a moral holiday, to let the world wag in its own way, feeling that its issues are in better hands than ours and are none of our immediate business."²

According to this view the notion of the absolute fulfills in the philosophical world a similar function to that which home does in the life of the schoolboy. It is the place where we go when we need a vacation. When the press of the battle grows too fierce and we feel ourselves overworked; when the arm grows weary and the courage flags, then the thought that all things are in the control of a higher power comes to us with a strange relief. What matters it, we say, whether we succeed or fail? The world is in the hands of a greater than we; the end is sure. Why, then, worry or be anxious? And so we lay down our arms and take the rest we need with a quiet mind. This power to give holiday to the spirit is, according to Professor James, the pragmatic value of the absolute.

And, indeed, we must admit that this is one of the functions which belief in the absolute has in the past fulfilled and still does fulfill in the lives of men. With that subtle instinct for the real which has made him such a master in the field of descriptive psychology, Professor James has seized upon an element in experience of far-reaching importance. That sense of peace in the midst of strife, of calm in the midst of hurry, of rest in the midst of confusion and turmoil, which is so characteristic a feature of the mystical type of man, has its roots in an absolutist philosophy. The mystic can turn away from the storm and stress of life with a quiet mind, because he knows that in communion with the eternal he has touched the ultimate reality of things. He is the man who, in the life of the spirit, has learned the secret of perpetual vacation.

But the question is a fair one, whether this account, true as it is so far as it goes, adequately describes all that the absolute means to the man who believes in it, or justly takes account of the actual effects which this faith has produced upon the conduct of those who hold it.

I have on my table the works of an old Puritan divine named William Ames, who was banished from England in the early years of the seventeenth century because his strict Puritanism made him obnoxious to the more easy-going society in the midst of which he was living. Ames went to Holland and there wrote a little book

² *Ibid.*, p. 362.

called 'The Marrow of Sacred Divinity,'³ which so admirably illustrates the point I wish to make that I can not do better than make him my example. In the first chapter of this book he unfolds a conception of theology which is practical enough to satisfy the most pragmatic of philosophers. "Divinity," he tells us, "is the doctrine of living unto God . . . and seeing every art consists of rules whereby some act of the creature is directed, and seeing life is the most noble of all acts, divinity can not properly be conversant about any other thing than about life. . . . Moreover, seeing this life is a spiritual act of the whole man whereby he is carried on to enjoy God and to do according to his will, and it is manifest that these things are proper to the will, it follows that the prime and proper subject of divinity is the will. . . . But seeing this life and will is truly and properly our most perfect practise it is of itself manifest that divinity is a practical and not a speculative discipline. Not only in that common respect whereby other disciplines have their *εὐπάξια*, well doing for their end, but it is practical in a peculiar and special manner and above all others."⁴

This pragmatic view-point is consistently followed throughout the entire book. What God is in himself, he says, we can not know, and it is futile to inquire. All 'that may be known of God' by us is 'his sufficiency and his efficiency';⁵ or, as we might translate, the power at his disposal and the use which he makes of it.

So far, I think Professor James himself would have no quarrel with our old Puritan's definitions. But when Ames proceeds to describe more in detail what are these powers which make God sufficient for man we find that they lead us straight into the region of the absolute. The God of Ames is the infinite, the immeasurable, the incomprehensible, the eternal, the unchangeable. He is a God whose will 'determines of all things, greatest, least, contingent, necessary, free, without exception' (p. 29). It is 'universally effectual so as he can in no wise be hindered or frustrated, whereby he can not obtain what he will' (p. 30). Neither angel nor man can resist him, and even sin itself is here by his permission.

Here, then, we have a clear case of a man who accepts the absolute on pragmatic grounds, and by observing what the effect of the belief is upon his own conduct, we can tell how far Professor James's own diagnosis is adequate.

What, then, ought William Ames to do in order to prove the adequacy of William James's interpretation? Clearly he ought to

* Published by order from the Honorable the House of Commons, London (1642).

⁴ *Op. cit.*, pp. 1, 2, 3.

⁵ *Ibid.*, p. 9.

contemplate the prevailing customs and practises of his day in an attitude of philosophic calm, knowing that God maketh even the wrath of men to praise him, and that in the end, whatever man may do or forbear, his holy will will prevail. Instead of acting, he ought to refrain from acting. What he actually does is to proclaim his opinions so insistently that the University soon becomes too hot to hold him and he has to flee as a refugee to Holland, where he proceeds to write a book, in which the ethical requirements of the new Puritanism are set forth with a rigor and vigor unexampled even in that day of plain speaking. In short, he acts in just that uncompromising, unadaptable way which has been characteristic of the Puritan in every age, and all this in the name of that very faith whose one practical effect is supposed to be to promote an easy-going tolerance.

Now, what interests us here is not so much the fact that he does this, as the reason for his doing it. There is a happy faculty of human nature which enables us to secure immunity from the effects of inconvenient beliefs by isolating them in a kind of perpetual mental quarantine, and by this simple device it is often possible even for professed philosophers to avoid the consequences which seem to others to follow logically from their principles. But, in the present case, we are dealing with no such lapse of logic. If we had questioned the old Puritan as to the reason for his uncompromising attitude, his answer would have been a very simple one. He would have pointed us with Calvin to the will of God, which is 'the supreme rule of righteousness.' God had commanded him to proclaim his will to a crooked and perverse generation; and woe was him if he should hold his peace. Granted that the moral laxity of the Cambridge latitudinarians might in its own way minister to God's glory by affording an occasion for the exercise of his justice, he was conscious of being called to a different and to a higher destiny. His duty was to cry aloud and not forbear. And cry aloud he did in stentorian tones. Once persuade a man that the supreme power upon whom men and angels depend speaks through his voice, and the more majestic God's might and the more irresistible his will, the more powerful will be the motive which impels him to utterance.

It would seem, then, that the formula in which Professor James has expressed the pragmatic value of the absolute is too narrow a one. Important as has been the function of the idea as an inducer of rest, it is not to be compared with that which it has exerted as an inspirer of action. It is a great thing to feel that you are master of your own will and arbiter of your own destiny, but it is a greater to be assured that you are the instrument through which the universal will is

executing its decrees and working out the universal destiny. This has been the faith of statesmen as well as of philosophers; of soldiers as well as of dreamers. It is a creed which has not only made it possible for its adherents to rest in peace when rest was needed. It has given them strength to work and to fight when but for it they would have been obliged to rest.

The reason why Professor James has overlooked this function of the absolute seems to be that, like his theological fellow pragmatist Ritschl, he regards the idea as the private property of modern idealistic pantheism of the Hegelian type, a form of philosophy which is particularly antipathetic to his own more 'tough-minded' (*i. e.*, pragmatic) temperament. But Hegelianism is only one form, and that by no means the most important, of absolutist philosophy. One may make will supreme as well as reason. The English Puritan was in his way as true an absolutist as the German pantheist; and a Cromwell and a Gordon, as well as a Spinoza, must be called to the witness stand before all the testimony as to the pragmatic value of the absolute shall be fully in.

To sum up: If pragmatism in its conventional anti-absolutist sense has given men courage to attempt the possible, the absolutist faith has steeled their wills to attempt and even, at times, to achieve the impossible; and a faith that can do this, whatever its logical difficulties, is certainly worthy of serious consideration on pragmatic grounds.

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DISCUSSION

PROFESSOR PRATT ON TRUTH

PROFESSOR J. B. PRATT'S paper in No. 12 of the present volume of this JOURNAL is so brilliantly written that its misconception of the pragmatist position seems doubly to call for a reply.

He asserts that, for a pragmatist, truth can not be a relation between an idea and a reality outside and transcendent of the idea, but must lie 'altogether within experience,' where it will need 'no reference to anything else to justify it'—no reference to the object, apparently. The pragmatist must 'reduce everything to psychology,' *aye*, and to the psychology of the immediate moment. He is consequently debarred from saying that an idea that eventually gets

psychologically verified *was* already true before the process of verifying was complete; and he is equally debarred from treating an idea as true provisionally so long as he only believes that he *can* verify it whenever he will.

Whether such a pragmatist as this exists, I know not, never having myself met with the beast. We can define terms as we like; and if that be my friend Pratt's definition of a pragmatist, I can only concur with his antipragmatism. But, in setting up the weird type, he quotes words from me; so, in order to escape being classed by some reader along with so asinine a being, I will reassert my own view of truth once more.

Truth is essentially a relation between two things, an idea, on the one hand, and a reality outside of the idea, on the other. This relation, like all relations, has its *fundamentum*, namely, the matrix of experiential circumstance, psychological as well as physical, in which the correlated terms are found embedded. In the case of the relation between 'heir' and 'legacy' the *fundamentum* is a world in which there was a testator, and in which there is now a will and an executor; in the case of that between idea and object, it is a world with circumstances of a sort to make a satisfactory verification process, lying around and between the two terms. But just as a man may be called and treated as heir before the executor has acted or the estate is divided, so an idea may practically be credited with truth before the verification process has been exhaustively carried out—the existence of the mass of verifying circumstance is enough. Where potentiality counts for actuality in so many other cases, one does not see why it may not so count here. We call a man benevolent not only for his kind acts paid in, but for his readiness to perform others; we treat an idea as 'luminous' not only for the light it has shed, but for that we expect it will shed on dark problems. Why should we not equally trust the truth of our ideas? We live on credits everywhere; and we use our ideas far oftener for calling up things connected with their immediate objects, than for calling up those objects themselves. Ninety-nine times out of a hundred the only use we should make of the object if we were led up to it by our idea, would be to pass on to those connected things by its means. So we continually curtail verification processes, letting our belief that they are possible suffice.

What constitutes the relation known as truth, I now say, is just the *existence in the empirical world of this fundamentum* of circumstance surrounding object and idea and ready to be either short-circuited or traversed at full length. So long as it *exists* and a satisfactory passage through it between the object and the idea is *pos-*

sible, that idea will both *be* true, and will *have been* true of that object, whether fully developed verification has taken place or not. The nature and place and affinities of the object of course play as vital a part in making the particular passage possible as do the nature and associative tendencies of the idea; so that the notion that truth could fall altogether inside of the thinker's experience and be something purely psychological, is absurd. It is *between* the idea and the object that the truth-relation is to be sought and it involves both terms.

But the 'intellectualistic' position, if I understand Mr. Pratt rightly, is that, although we can use this *fundamentum*, this mass of go-between experience, for *testing* truth, yet the truth-relation in itself remains as something apart. It means, in Mr. Pratt's words, merely '*this simple thing that the object of which one is thinking is as one thinks it.*'

It seems to me that the word 'as,' which qualifies the relation here, and bears the whole 'epistemological' burden, is anything but simple. What it most immediately suggests is that the idea should be *like* the object; but most of our ideas, being abstract concepts, bear almost no resemblance to their objects. The 'as' must therefore, I should say, be usually interpreted functionally, as meaning that the idea shall lead us into the same quarters of experience as the object would. Experience leads ever on and on, and objects and our ideas of objects may both lead to the same goals. The ideas being in that case shorter cuts, we substitute them more and more for their objects; and we habitually waive direct verification of each one of them, as their train passes through our mind, because if an idea leads *as* the object would lead, we can say, in Mr. Pratt's words, that in so far forth the object is *as* we think it, and that the idea, verified thus in so far forth, is true enough.

Mr. Pratt will undoubtedly accept most of these facts, but he will deny that they spell pragmatism. Of course, definitions are free to every one; but I have myself never meant by the pragmatic view of truth anything different from what I now describe; and inasmuch as my use of the term came earlier than my friend's, I think it ought to have the right of way. But I suspect that Professor Pratt's contention is not solely as to what one must think in order to be called a pragmatist. I am sure that he believes that the truth-relation has something *more* in it than the *fundamentum* which I assign can account for. Useful to test truth by, the matrix of circumstance, he thinks, can not found the truth relation *in se*, for that is trans-empirical and 'saltatory.'

Well, take an object and an idea, and assume that the latter is

true of the former—as eternally and absolutely true as you like. Let the object be as much ‘as’ the idea thinks it, as it is possible for one thing to be ‘as’ another. I now formally ask of Professor Pratt to tell what this ‘as’ness in itself *consists* in—for it seems to me that it ought to consist in something assignable and describable and not remain a pure mystery, and I promise that if he can assign any determination of it whatever which I can not successfully refer to some specification of what in this article I have called the empirical *fundamentum*, I will confess my stupidity cheerfully, and will agree never to publish a line upon this subject of truth again.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Family. ELSIE CLEOS PARSONS. New York and London: G. P. Putnam's Sons. 1906. Pp. xxv + 389.

The Family. HELEN BOSANQUET. London: Macmillan & Co.; New York: The Macmillan Co. 1906. Pp. vi + 344.

The Japanese Code and the Japanese Family. MONROE SMITH. *The Quarterly Law Review*, January, 1907.

Mrs. Parsons regards her book as ‘a pedagogic device’ for the use of university lectures upon elementary sociology. Her subject is the study of human customs and institutions which relate to the physiological bases of family life. Fourteen chapters or ‘lectures’ fall into three main divisions of ‘Parenthood,’ ‘Marriage’ and ‘Kinship.’ Each chapter is an abstract of topics for classroom discussion. The method of presentation is, therefore, a rapid summary of facts referred to, free from all history of theory and reduced to important conclusions. There are well-classified bibliographical notes after each chapter and the index and table of contents are thorough and helpful to the student.

Consideration of the modern family and of the ethical bearing of facts already presented is reserved for two closing chapters. The author holds that Christianity has done little to dignify marriage; for although it has looked upon wedlock as a divine institution and indissoluble, it has also taught that monogamy is only the least evil method of satisfying base instincts. Nevertheless, the Christian doctrines of the worth of the individual soul, irrespective of sex, have sanctioned modern movements for the emancipation of woman from subordination to husband and male relatives.

The final test of the ethical efficiency of the family is its power to prolong infancy and to secure to offspring the advantages of this prolongation. Late marriage, therefore, permitting careful education for parenthood, would seem better than early marriage. On the other hand,

late marriage has usually been accompanied by lack of chastity; but prostitution, 'being incompatible with democracy, must pass away,' which leaves two alternatives, either 'the requirement of absolute chastity before marriage, or the toleration of sexual freedom in the unmarried of both sexes.' As monogamous relations are most conducive to health, 'it would seem well to encourage early trial marriage, the relation to be entered into with a view to permanency, but with the privilege of breaking it if proved unsuccessful, and in the absence of offspring without suffering any great degree of public condemnation.'

Mrs. Parsons's statement of this proposed reform is by no means clear, but we may probably take it that she would classify early unfortunate marriage as a less permanent form, not actually urge or 'encourage' the young to make experiments in the marriage relation.

Arguing for the responsibility of the state for the education of its citizens *vs.* parental ownership, the writer suggests that divorce legislation should divide applicants for separation into two classes, parents and the childless, that there might be public school nurses with power to supervise the home training of children, and, finally, that legal restriction might be placed upon the right of parents to the earnings of their children. This last regulation would serve to check the birth-rate and to facilitate the operation of laws concerning child-labor and compulsory education.

In view of the misapprehension which the discussion of this book produced when it first appeared, it is but fair to point out that the chapter on ethical considerations in which the suggestions concerning trial marriage rather casually occur, is a brief foot-note to the volume. This chapter could be omitted without mutilating the work in any material way.

In her former book, 'The Strength of the People,' Mrs. Bosanquet has a chapter entitled 'The Importance of the Family,' wherein she holds that 'developed to even a mediocre degree of efficiency, the family is the one sufficient safeguard against a surplus population,' and that the aim of the community should be to increase rather than to diminish its responsibilities. This new work, 'The Family,' appears to be an expansion of the earlier chapter. Not biological and ethnic origins, but the significance of the family as a social institution, and the need of maintaining its effectiveness, constitute the theme of the book.

It is evident that the author has in mind the arguments of certain theorists who regard the family as an institution based upon the rights of private property. According to such reformers private property ought to be and presumably will be abolished, hence the family, too, in its traditional form will cease to exist. Mrs. Bosanquet attempts to prove the permanence of the family as an economic and ethical institution which has developed throughout all changes toward a more deliberate, and 'therefore higher form of monogamy.'

The object of family life has ever been twofold, the care of children and the veneration of ancestors. In the present day the weight of feel-

ing is thrown forward into the future rather than backward into the past. Mrs. Bosanquet writes, naturally, of the family in England where conservative conditions have favored its functional continuity. Accordingly, although she defines the family as 'the practical syllogism,' man, woman and child, she usually means a group of three generations and, sometimes, even more.

In discussing the relations of the family to industry, property and the state, the author refers chiefly to the works of Grosse, Stepniak, Le Play and Brentano. These studies of the connection between forms of the family and its environment seem to prove that 'the family in its ultimate form, the modern simple family, persists throughout all economic conditions without exception.'

Interventions of the state affecting the family and its property have been based upon two different theories; first, that 'the interests of the family are best served when its property is held and administered by the strongest member on behalf of the others'; second, that 'the interests of each member of the family are largely independent of the interests of other members.' "The truth would seem to be that *any* legislative interference with the relation between the family and its property which does not accord with the customs and traditions of the people will, just so far as it is operative, break through the ties which hold the members of the family together."

While the patriarchal family is strongest when founded upon ancestor-worship, it remains firm when based on landed property or industrial co-operation, and even when deprived of these authorities it retains sufficient strength through tradition to preserve a sense of common responsibility. In modern life, however, as the rigidity of the patriarchal family gives way, we find two new types of family life, 'the stable family,' not disintegrated by changing conditions, and the 'unstable family,' which becomes a mere succession of disconnected individuals. "Only in connection with the latter type do such problems as old-age pensions arise." For the stable family a new bond of unity is found in the fact that 'economic cooperation' has largely replaced 'industrial cooperation'; that is to say, instead of working together as formerly at the same occupation, individual members of a family can now engage in different occupations and contribute their earnings to support a common household.

Is there in the modern family anything to correspond to the tradition which arises in connection with the possession of land? Mrs. Bosanquet, observing British conditions again, replies without hesitation that such an interest does exist in the work in which the family is engaged; "whenver we find an industry of any degree of specialization, there we find, to a greater or less extent, a continuity of work binding the generations together."

If the bond of family life is strengthened by economic forces the family is itself an economic instrument. It provides the chief motive for work, it determines the transmission of property, it decides the quantity and quality of the population. "Even if the world could carry

on without the family, it could not afford to lose the qualities which would go with it." In the inherited family type lie the roots of sympathy and unity of action. The preservation of family types furnishes individuality and variety of character in the community. "The strength of a nation does not lie in the uniformity of its members, but in the variety of characters which can be brought to work harmoniously within it." "The family is the great storehouse in which the hardly earned treasures of the past, the inheritance of spirit and character from our ancestors, are guarded and preserved for our descendants. And it is the great discipline through which each generation learns anew the lesson of citizenship that no man can live for himself alone."

Mrs. Bosanquet's book lacks the index and summary of chapters which go far toward making Mrs. Parsons's work a useful text-book.

Professor Monroe Smith, of Columbia University, gives a sketch of the earliest form of the family in Japan, of the transition, between the eighth and thirteenth centuries of our era, to new kinship groups and a marriage form borrowed fully developed from China, and, finally, of the effects of Imperial legislation since 1868 and the sweeping reception of west European law.

The present Japanese family represents a compromise between the old Japanese house, or small clan, and the occidental family system. The house remains a religious institution and its head a priest with protective and disciplinary powers, but the property of the group is no longer held entirely by him, and within the house, in the simple family group of man, wife and child, the husband and parents have independent authority.

Marriage and divorce depend upon mutual consent, and entry upon the civil register is the only formality required. There is also marked individualism both in the marriage relation and in property rights. Indeed, the Japanese house appears at present to be held together chiefly by the unifying force of ancestor-worship, while the family group within it is made feeble by a greater facility of divorce than any occidental state concedes.

"It seems probable," says the writer, "that the future development of Japanese society will bring the individual face to face with the national state without important intermediate authority or protection." It may, therefore, exhibit more clearly than does any other advanced group the contrasted claims of the individual and of the state both in the marriage and in the parental relations.

Western sociologists may profitably study the status and education of the child under conditions such as those now prevailing in Japan, where frequent divorce, remarriage and new families are possible. How will the Japanese family answer the requirements suggested above as tests of efficiency? Is it a successful institution for the care of the young? Is it a sufficient safeguard against over-population?

MARY L. BUSH.

The Fundamental Principle of Fichte's Philosophy. ELLEN BLISS TALBOT. *Cornell Studies in Philosophy*, No. 6. New York: The Macmillan Co. 1906. Pp. vi + 140.

The author aims to give 'a careful study of Fichte's conception of the ultimate principle' (p. iii), called by him *Ego, Idea of the Ego, moral world-order, God, the Absolute, Being*, etc. She approaches the problem by contrasting Kant and Fichte in Chapter I., 'Kant and Fichte: The Relation of Human Consciousness to its Ideal.' In Kant, the matter and the form of human conscious life, both theoretical and practical, 'are not shown to belong together; they imply, but at the same time repel, each other: they do not constitute an organic unity' (p. 4). Kant regarded the *ideal* of knowledge as an organic unity of form and matter in the 'thought of the pure self-consciousness, which is one with its object because it has itself for object' (p. 7), which, however, 'is at best but a problematic concept; we can never assert that there is any reality corresponding to it' (p. 8). And in the practical ideal of Kant 'virtue and happiness are . . . held together by an external force' (p. 12), while 'the concept of design . . . has merely subjective validity' (p. 15). But 'the motive of Fichte's philosophy is its constant effort to rise above the opposition of form and matter' (p. 16). According to Fichte, "consciousness regarded as merely intellectual is bound in the fetters of an inevitable dualism; to the 'Ego as intelligence' a non-Ego is ever opposed. But if you regard consciousness merely in this way, you mistake its true nature" (p. 20). 'Its true nature is not the actual, but the ideal' (p. 20); reality is activity. Fichte's own doctrine is now developed, with exceptional clearness, in Chapter II., 'The Works of the First Period: the Idea of the Ego.' Even on the theoretical side, Fichte is not a subjective idealist, but a dualist. "It is in his crusade against this pernicious notion [the thing in itself] that he unconsciously falls into modes of speech which subject him to misinterpretation" (p. 28). Fichte believes, with Kant, that the ideal can never be realized, but, unlike Kant, that we can approximate it; and in the first period, at least, that it is not transcendent of, but immanent in, human thought and life. "In two respects Fichte's position in the *Grundlage* represents an advance beyond that of his predecessor. In the first place, he does not believe, as Kant does, that human experience is altogether unlike its ideal, that it can not approximate to it in the least degree. And, in the second place, we see no disposition to conceive of the ideal as an artificial union of form and matter" (p. 45). But 'when we ask whether the ideal is mere form or an organic union of form and content his answer is not so clear and unhesitating as might be desired' (p. 45). Both of these 'two different conceptions of the Idea of the Ego' (p. 53) seem to be in Fichte's mind. Whether God is supraconscious or not, in what sense consciousness disappears in the absolute, is doubtful. The author inclines to the view that 'in esthetic rapture, in religious ecstasy, in the highest form of intellectual activity, there is often a submergence of the distinct consciousness of self, a

blurring of the line of division between subject and object, which gives us a suggestion of what Fichte may mean by the disappearance of consciousness as the goal of all our striving' (p. 67).

In Chapter III., 'Works of the Second Period: Being and Existence,' we learn that Fichte's principal change in the second period was to regard his ultimate principle no longer as immanent, but as transcendent. This principle, the absolute, is, as Loewe has shown, not mere being as opposed to activity, but being *as* life and activity. Between the two extreme views, that there was only a change in terminology and that there was an opposition, the author chooses a middle course. 'Doctrines which are implicitly present in the first period arise into clear consciousness in the second' (p. 76), and 'in the first he seems disposed to emphasize the temporal aspect of the ultimate principle, whereas in the second he dwells upon its timeless aspect' (p. 76) and its being as a real objective force. As to the organic unity of the Absolute with its manifestations, 'Fichte conceives the relation between the *Sein* and the *Dasein* of the absolute as necessary, or—what is a better way of putting it—that *Sein* and *Dasein* are for him simply two aspects of the one principle' (p. 106). 'Fichte's ultimate principle is . . . a self-realizing value' (p. 111). 'The identification of the *ought-to-be* and the *is-to-be* is the essence of Fichte's conception of the ultimate principle' (p. 112). Nor is there more hypostatization of the principle in the second period than in the first. "The infinite will is not a will that apprehends values as distinct from it and as issuing commands to it; it is itself the quintessence of all value" (p. 118). But does this infinite will, this absolute, exist? "While I admit that there is room for difference of opinion, it seems to me that Fichte does not recognize a universal consciousness—one in which all the oppositions of human experience are resolved—as existent, as actual. Such . . . is the goal toward which the world-process (the *Dasein* of the absolute) is tending, but it will never be attained" (p. 122). "The assertion that God has being is not the assertion of an actually existent universal consciousness; it is rather the declaration that the universal consciousness . . . not merely . . . *ought* to be, but also . . . *is* to be" (p. 122).

In note *A* the author takes issue with Thiele's theory of three stages in the development of Kant's *Intellectuelle Anschauung*, reducing the last two stages to one. Note *B* attacks Thiele's theory that Kant regards human knowing as differing from its ideal only in degree. The author believes that Kant meant a difference of kind.

As under the category of *Fichte-studien*, the book deserves the highest praise, not only for careful scholarship, but also for clearness and articulation of argument. It is a characteristic product of the thoroughness of training which is shown in the *Cornell Studies*. *Fichte-studien* are needed in English, and we owe a debt of gratitude for this one. Its point of view differs somewhat from that of Miss Thomson's monograph; it strikes the reviewer as clearer and more systematic. One thing seems a matter of regret, in this and other similar historical studies—particu-

larly where the subject is so difficult a one as the Fichtean philosophy—such discussions generally consider the general ontological position, taking little trouble with the exposition of the knotty details of the stages of the deduction. It is not nearly so hard to get an *approximately* correct idea of Fichte's central principle as it is to get an equally approximate understanding of many of the deductions of particular categories. From the student's point of view, what is most needed is a good running commentary, covering, *e. g.*, all the deductions of the *Wissenschaftslehre*. It is to be hoped that the next monograph on this subject will devote itself more to such questions of detail. After all, does not the ontological summit rest on the many particular deductions as its base? And can we feel the force of the Fichtean metaphysics adequately without going through such weary drudgery as the deduction, *e. g.*, of time, of sensation, of memory, etc? Let some lover of the historical undertake to make these deductions clear in English!

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La fonction du langage et la localisation des centres psychiques dans le Cerveau. J. GRASSET. *Revue de Philosophie*.

Dr. Grasset startles one by the statements in the beginning of his paper. The entire theory of localization of mental function is to be overthrown. The center of Broca is no longer to be considered as the center for speech. But when we read further we are reminded of the saying, "What a dust I do raise!"

Dr. Grasset makes it a point to combat the work of Dr. Marie, and tries to show that the latter is all wrong. We are thus pulled rather unwillingly into an arena of conflict, in which only one of the participants is active. We are not fully instructed as to the complete nature of Dr. Marie's work and so must take much for granted, from Dr. Grasset's point of view. It seems that Dr. Marie holds that in aphasia, so called, there is a decrease in general intelligence which reacts on the function of language; that language alone has little to do with the matter; that localization as based upon localization of language must, therefore, be somewhat askew. For a patient suffering from aphasia will understand and execute an order given in instalments, whereas he will be unable to react to the same order given as a whole.

As against this Dr. Grasset holds that mental defect is not enough to explain all the defects present in language. Aphasic patients often have more ideas than they are able to express (p. 15). A classic illustration of aphasia is that in which a patient is able to give expression to a *felt* emotion but can not manifest any emotion at the mere *thought* of one. This also shows, so holds Dr. Grasset, that language is a special function. Loss of this function in the above-mentioned case prevents the patient from making the proper connections (p. 16). Further along Dr. Grasset confesses that he does not understand what Dr. Marie means by certain portions of his exposition. How much the less can the reader under-

stand, especially if he is not so fortunate as to be conversant with Dr. Marie's work.

Polemical writing is always unsatisfactory, unless, of course, the points at issue are well known. It is hardly profitable to follow Dr. Grasset's exposition at full length, and I therefore end with the points which he wishes to make. They are the following:

1. The function of language is a sensori-motor function. The centers corresponding are those situated in the third frontal convolution and the region at the base of the fissure of Silvius.

2. Lesion in this cerebral zone corresponds with disorder in speech.

3. The centers of Broca and of Wernicke must, therefore, remain as before the centers concerned with aphasia.

It is seen that Dr. Grasset wishes to preserve the old landmarks as they are.

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JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. May, 1907. *Contemporary Philosophy in Germany* (pp. 237-265): OSCAR EWALD. - Starting from the 'return to Kant,' philosophy has again evolved through the stages of Fichte and Hegel. Neo-Kantianism is sceptical towards evolutionism and denies psychologism. The following tendencies are also marked, neo-romanticism, the revival of the philosophy of Fries, ethical and esthetic speculation starting from Nietzsche and a renewed interest in Goethe's view of life. On the whole, the dominant note in technical philosophy is Kant to Hegel. Hegel was reached in 1906. *Pure Experience and Reality* (pp. 266-284): E. B. MCGILVARY. - The author denies that reality needs contemporaneous experience to be made complete. Science views its objects as completely real prior to experience. The representative theory of knowledge is partly true. *The Material of Thought* (pp. 285-297): GEORGE H. SABINE. - Not multiplicity of objects, but incongruous logical relations in experience, present problems for thought. Facts and theories grow together and involve each other. Every fact is an incipient theory. *Determinism and Indeterminism in Motives* (pp. 298-311): BERNARD C. EWER. - The humanistic movement has revived indeterminism. The deterministic argument makes this fallacious assumption 'that a conflict of desires implies determinate relations of comparative strength among the desires.' The desires are not quantitatively, but qualitatively, different, intrinsically incomparable. Decision follows not necessarily from the stronger motive, but from the fact of perplexity which needs *some* solution. The argument from causality is inconclusive. Both determinism and indeterminism are partly true. *Reviews of Books. Studies in Philosophy and Psychology*: JOHN DEWEY. L. William Stern, *Person und Sache*: J. A. LEIGHTON. G. H. LUQUET, *Idées générales de Psychologie*: WALTER B. PITKIN. *Notices of New Books. Summaries of Articles. Notes.*

- Alexander, Archibald B. D. *A short History of Philosophy*. Glasgow: James Maclehose & Sons. 1907. Imported by The Macmillan Co. Pp. xxiii + 601.
- Chatterton-Hill, George. *Heredity and Selection in Sociology*. London: Adam and Charles Black. 1907. Pp. xviii + 571. 12s. 6d.
- Cheyne, T. K. *Traditions and Beliefs of Ancient Israel*. London: Adam and Charles Black. 1907. Pp. xx + 591.
- Faggi, A. *Principi di psicologia moderna*. Editizione rifatta ed ampliata. Palermo: Alberto Riber. 1907. Pp. vii + 393.
- Freeman, Kenneth J. *Schools of Hellas*. An essay on the practise and theory of ancient Greek education from 600 B. C. to 300 B. C. London: Macmillan & Co.; New York: The Macmillan Co. 1907. Pp. xviii + 297.
- Mackenzie, J. S. *Lectures on Humanism*. London: Swan, Sonnenschein & Co. 1907. Pp. vii + 243. 4s. 6d.
- Morrison, John. *New Ideas in India during the Nineteenth Century*. A study of social, political and religious developments. London: Macmillan & Co.; New York: The Macmillan Co. 1907. Pp. xii + 282.

NOTES AND NEWS

THE *Spectator* for June 1 contains an interesting article on 'The Dethronement of Euclid at Oxford,' from which we have taken the following extract: "Even before the recent election to the Chancellorship, the world was aware that Oxford was staunchly conservative—Oxford, that is, as a voting body, the greater Oxford, which consists mainly of the country parson. What is not perhaps so generally known is the daring innovations to which the inner Oxford—that is to say, the teaching and tutorial staff—will at times commit itself. Within the last few years a revolution has been accomplished which ought really to affect the mind of the nation more than the differences between Lord Curzon and Lord Roseberry. A text-book has been discarded which was already venerable for its antiquity at the beginning of the Christian era. Needless to say, we are referring to Euclid's 'Elements.' For what other text-book ever had such a run as that? It has been accepted ever since its publication, which was in the reign of the first Ptolemy (B. C. 323–285). Thus Euclid's 'Elements' is even older than the Septuagint version of the Pentateuch, which in the somewhat mythical account of its origin is assigned to the reign of the second Ptolemy, though there is some reason to believe that it really originated in that of the first. The two books may be compared with one another in the wideness of their circulation; but how different has been the nature of their influence! As far as Euclid is concerned, the tree of the knowledge of good and evil might never have been planted. His appeal is to the pure intellect. He does not

stir the feelings or warm the heart. He knows nothing of the beautiful and the good, but only of the true. Nor does he care for truth of every kind, but only for such as can be demonstrated. The real lesson which he has taught the world has not been as to the properties of plane and solid figures so much as a lesson in method—how from self-evident first principles joined with a few initial assumptions to develop a system of truth by a rigorous train of reasoning. Geometry was the glory of the Greeks, and served with them as the type of what every science would be, if it could. Even if the proofs of all the propositions had been the invention of other writers, and not of Euclid himself, the concatenation of them would still be an imperishable monument of genius. No writer has ever become so identified with a science as Euclid with geometry. The nearest approaches are to be found in the relation of Aristotle to logic and of Adam Smith to political economy. . . . But Aristotle was more than logic, and Adam Smith more than political economy, whereas Euclid's name is connected only with geometry. So complete indeed has been the coincidence that many may have shared the experience of the present writer, and may be able to recall the thrill of juvenile astonishment with which they first learned that Euclid was a man! . . . The dethronement of Euclid at Oxford came about at the end with a startling suddenness, some of those who were in favor of the reform not having expected to see it effected in their own lifetime. But the dethronement, after all, is only a partial one. Students are still expected to prove Euclid's propositions; only they are not bound to prove them in Euclid's way. Up to September, 1904, the elements of geometry that were required for Responsions meant simply Euclid, Books I. and II. No proofs were admitted which assumed the proof of anything not proved in preceding propositions of Euclid. But in Michaelmas term of the same year the greater part of Book III. was added, and the student was expected to deal with easy deductions from propositions enunciated by Euclid, any method of proof being declared admissible 'which shows clearness and accuracy in geometrical reasoning.' If Euclid could be vindictive, his *manes* ought already to be satisfied. For from that time to this the result has been the practical abandonment of the study of geometry on the part of the Oxford passman. No one knows exactly what is required or where to look for it. Consequently the great majority of men offer algebra instead. The dethroners of Euclid console themselves with thinking that, when a generation trained in the new geometry is sent up from the public schools, geometry will come by its own again. But the principle *Denique sit quidvis, simplex dumtaxat et unum* demands the survival in the struggle for existence of some single text-book. Great is the honor which awaits the work that shall definitely succeed to the place of Euclid."

PROFESSOR H. HEATH BAWDEN, of Vassar College, has accepted the professorship of philosophy in the University of Cincinnati.

DR. CHARLES SPEARMAN has been appointed reader in experimental psychology in University College, London.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE PSYCHOLOGY OF THE LEARNING PROCESS

PROBABLY no one to-day hopes to invent a machine which will have perpetual motion, and yet many inventors are striving towards an approximation to such a marvel and are constantly reducing friction and making machinery more useful. Likewise, no one can hope to lay down rules which will insure that every child will learn what it is thought he should learn, and yet such an ideal helps us on the way towards formulating such pedagogical principles as will render our system of educational machinery more regular and efficient in its output. And so I am attempting in these few pages to block out in a rough way the psychology of the learning process. With this problem in mind for years in a more or less definite way, I have been introspecting my own mental condition when trying to learn, I have been observing children in the greatest age of 'free learning,' from four to six, and I have also observed adults and experimented somewhat with them in laboratories and class-rooms.

Starting with some notions gained, perhaps, from the Herbartian pedagogy and psychology, it seems to me there are three things, or perhaps four things, which must be taken into account concerning consciousness when learning is taking place in the best way. They are (1) the attitude of the mind, (2) the contents of consciousness, (3) the form of the contents of consciousness, and (4) the structure of consciousness.

Popularly speaking, the proper attitude of mind for learning is that of inquiry, what Professor Baldwin so recently has called 'proposal,' in his article on 'Thought and Language.' When you are engaged in free learning or the pursuit of truth, is it not so that you first set yourself a problem or question? Are you not best satisfied with your pupils when they are asking questions? 'Students are known by the questions they ask,' is an aphorism which my students attribute to me. Of course, I need not remind you that a child from two to six is a wriggling mass of interrogation points. And what is the attitude of inquiry? It is that attitude of the mind when certain ideas are ready to receive new ideas of a related nature, or to form

new associations. We generally describe the state by calling it the state of attention, and in particular the state of free learning seems to be that of interested attention or, briefly, interest. A certain train of ideas predominates over other ideas, which requires further associations in order to complete itself. The 'what' or 'why' of a question denotes a gap in a train of thought to be filled, and the person who has the most gaps can naturally take the most in, can learn the most. A very pronounced state of inquiry may be distressing, morbid, dangerous, in some cases, but do we not also designate it as 'divine discontent' in others?

The state of mind in which we are not going to learn much of anything is that of indifference, where our ideas flow along without a break or a ripple on the surface, and if it is not one idea, then it is another which slips into the stream, and no definite end or conclusion is reached because there is no end in view, no gap to be filled.

The content of the mind also determines the success of the learning process. There are certain ideas or groups of ideas which in their very nature or make-up seem to require wider associations. For example, when the child starts to school, the idea complex c-a-t seems to be ended in itself, the child can rest satisfied if he never goes on to 'cats' or the c-a-t-c-a-n-r-u-n, although he may wish to learn to read. But present the idea complex of the story of a-hen-a-guinea-pig-and-a-cat, etc., or a live-kitten-chasing-its-tail, and what a going-on there is in the mind until the story is heard or the kitten is captured and examined from tip of nose to tip of tail! Tell a man of science it is a fine day, and he takes it calmly. Tell him the causes of the earthquakes along the Pacific coast have been discovered, and his consciousness immediately takes the attitude of inquiry and the thought shapes itself with a blank, 'the causes of the earthquakes are — ?'

So the contents of consciousness must be just those which are provocative of the right attitude of inquiry, of gaps. They are the ideas which have many points of attack or attachments. They must lead to motor activities, especially for the child. If it is true that every idea tends to find motor expression, those ideas which permit of this most naturally are the ones most easily engaged in the acquiring of new ideas, for it is through motor accommodations of muscle and neural adjustment of the sense-organs that we learn again. So the ideas of sense or perceptions are easily the ones which have the greatest learning capacity in childhood, and perhaps later, too, for most of us. We say those contents which have this power of awakening and controlling the other ideas are interesting, and we call them interests. They are constantly changing, and yet very

early they mark out the permanent lines along which the mind moves with the greatest freedom and activity.

As to the form of consciousness which is most conducive to learning: Is consciousness composed of clear-cut knowledge, definite ideas arranged in logical form, or is it a mass of 'unformed concepts,' vague fringes of consciousness, half thought, half feeling; *i. e.*, is it objective or subjective? Too often pedagogy has taken it for granted that consciousness is dealing with exactly the same material in the same form while learning that it does later when the subject is learned, and hence it has given rules for the arrangement of definite ideas instead of for forming the clear, definite ideas out of the vague, confused state popularly called feeling, through a transition stage which we call interest, until the ideas stand out clear and well defined and expressible in words. The process of real learning is making the subjective objective; that of teaching is making the objective subjective. Too often the process of teaching has been that of trying to make the objective in the teacher's mind appear at once as objective in the pupil's without the intermediate stage of subjectivity in the mind of the child. That sort of teaching is, as the Irishman said, the kind that 'runs in at one ear and out at the other, like water off a duck's back.'

To be a little Berkeleian, whatever has not gotten itself into our consciousness, absolutely does not exist for *our consciousness*. A piece of cake exists for a child before he lays hold of it and eats it, just as it does for an adult and other children, but a psychical experience of a thing in the individual's own mind is the only possible way in which it can exist, and this existence usually begins, more or less, in what I call a subjective way, *i. e.*, as a fringe of consciousness or a mass of vague ideas, fusing, as it were, with other ideas present; and it is this particular fusion state which is peculiar to each individual, and which he can not communicate to any one else. Gradually the new ideas work their way into the focus of consciousness, take the form of speech or words, and so can be made objective. Truly language is the test of the objectivity of knowledge, and so most teachers spend their whole effort on the testing process and have not given the proper attention to the preliminary conditions. As I look back on myself as a child, it seems to me that my school work was mostly the testing process, but in the long vacation months—there were always from six to seven of these months, fortunately for me—I drank in with the air a love and a consciousness of birds, flowers, sky, water, earth, literature and people, and was only grieved that all *my* questions were not answered. I never felt that I *had* to make all this objective, *i. e.*, tell any one about all this won-

derful world, but I wanted to, and to know the names of things, the reasons for things and their relations, and to tell what I had discovered myself. But this was first of all mine, my own that I could not share with anybody, and for that reason so precious, for I must keep it well until I could make it of value to others. To the genius nothing is more noble than the objectifying of his subjective consciousness, making what he has felt objective for all men. The poet, wrestling with the thoughts which have gripped him, will not let them go until he has received the blessing of words which enable him to give them a free gift to all mortals.

And so the learner takes what is objective to his teachers, fuses it with his own peculiar thought in this subjective state, and then puts it in the form of words and gives it back as his own objectification of his own experience. From the vague state it appears in the focus of consciousness with a peculiar subjective fringe of its own. This process, this transition from feeling to thought, we have called interest.

By the structure of consciousness, we mean those organizations of ideas with varying factors, such as memory, imagination, inductive and deductive reasoning. Which structure is most common in the best learning? We must not confuse this with the question, Which is the best structure for arranging and preserving knowledge? Where the aim is to keep the objective in the same language, I think we will agree that memory is necessary, but for what we mean by learning, making subjective truth objective, we must admit that something else is needed, for memorizing is associating ideas already objectified, ideas with which we dare not take liberties, as they have their definite relations of time and space, of cause and effect, of quantity, of position and other like relations. We can hardly be said to remember things until they have truly become objectified; so long as they are mostly fringes they never come back to us the same, and so they have constantly different associations. A feeling in its purest state is most largely made up of organic sensations, very vague fringes, and so is practically unmemorizable.

Now real learning, as we have said, is mostly working with fringes of consciousness, since the process is making the vague subjective clear and objective, and so a structure which admits of free groupings and recognitions is our best form. Perhaps it most often takes the grouping of imagination, *i. e.*, the mind makes freely any sort of connection it will between ideas old and new; that may be the end of it, or it may begin sorting out those ideas and making those connections which are necessary to fill the gap,

answer the question, and which finally shall sum up in a broad general statement all the details and be available for future details of a like nature. This is the inductive method, broadly speaking, and when this general statement is used to interpret other ideas, then it becomes deductive reasoning. Perhaps we have so long regarded the deductive as the structure best adapted for learning because it is the communicable stage, the teaching stage and the stage which the teacher is supposed to have reached before he himself can teach.

If we return to our observation of the child, I think we will find that imagination is the prevailing organization, and in the man of genius also, whether poet or scientist, there is just this ability to make new, free associations. The wise teacher, then, will be a person who, instead of doling out objective truths with one hand and with the other receiving back from the pupil the same idea stamped with the pupil's brain trade mark, shall rather be an interesting personality, a psychical and moral object in the pupil's environment from which the pupil can enlarge his own subjective experience. He is not to dictate the conditions of learning, but be on hand to supply the ideas which will be food for the already interesting ideas of the child, or even to help the child find his own interesting ideas. He must serve as the model for the 'trying on,' as Dickens's dolls' dressmaker, Jenny Wren, would say, of half-subjective, half-objective ideas; and he must be on hand to help in the organization from the loose structure of the imagination up through inductive reasoning to the compact form of deductive reasoning. He must help the child in his first-hand manufacture of knowledge, not cram him with second-hand material until his mind is a lumber-room. Or, again, he must not put in a grain of wheat and expect to receive it back immediately, but he must be content that the seed shall sink into the ground, decay and spring up quite a different-looking object from that which he gave forth, provided only that it bears promise of bearing seed in its turn.

Thus we see that the psychology of the learning process is not dealing with ideas and their associations primarily, but with the turning of subjective ideas and sensations, unexpressible in words, into the objective expressible, which can be given forth in the form of logical speech.

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DISCUSSION

PRAGMATISM VERSUS SKEPTICISM

THE ingenious and interesting way in which Professor Russell continues in Vol. IV., No. 9, of this JOURNAL the discussion started by his papers in Vol. III., No. 22, and Vol. IV., No. 3, brings it vividly home to me how rash it was for a doctor of science to undertake, even in jest, the duties of a doctor of medicine. For Professor Russell, at once claiming, on the strength of my remarks in Vol. IV., No. 9, the position of a patient, now demands to be cured by correspondence! I feel somewhat like the over-ingenious Mr. Frankenstein, and must confess my inability to endow Professor Russell with a pragmatic soul. However, as I dare not run away, I must try to persuade him that he has no real use for such an encumbrance!

I

Professor Russell's verdict on my criticism of his first article is that it leaves his "original proposition entirely unaffected. It still remains true that whatever practical problem this man shall solve, that solution is possible *only* if his action or his thought conforms to objective conditions which his purpose does not constitute."¹ I venture, however, to think that whether or not *I* have in any way damaged his original proposition, he himself has seriously mutilated it. For what he said at first was, "His idea was true *for no other reason* than that he thought or conceived this environment as it in fact was."² The difference seems to be that whereas *originally* Professor Russell contended that to think the environment as it is in fact is the *sole* condition of truth, he now holds that it is *one* (but not necessarily *the only*) condition to recognize a reality other than the agent's purpose. And where or when have any of us ever denied that? Even the extremest form of the doctrine of the 'making of reality' certainly does not deny that there is a reality already made, which it is pragmatically expedient to recognize. Indeed, so far is it from being true that pragmatists have ignored the obvious existence of 'objective' factors in cognitive situations,³ that the fact seems rather to be that they have unceasingly labored to impress on the naïve objectivism of their critics the embarrassments into which they have plunged by overlooking the existence and im-

¹ Italics mine. Vol. IV., p. 259.

² Italics mine. Vol. III., p. 601.

³ Vol. III., p. 600.

portance of the subjective contribution in all recognition of 'reality.' Certainly this was all I aimed at in commenting on Professor Russell, and all I meant by saying, ⁴ "It is quite erroneous to suppose that such situations do not contain a contribution from the subject which is essential to constitute their 'reality.' " I. e., whatever the 'objective' conditions a human purpose may recognize, this recognition is needed to constitute their *relevancy*, and so to make them parts of the 'reality' reacted on. Moreover, Professor Russell can not wholly have misunderstood me; else why should he now say that I 'admit that *some* part of the entire reality of the given situation was not determined by the purpose' of the lost traveler?

A departure from the most obvious meaning of his original statement is not, however, the only remarkable feature of Professor Russell's reply. He urges also, that just *that part* of the environing reality which determined the success of the agent's reaction is what makes an idea 'true.' That this assumption was part of the intellectualist's case has, I think, always been perceived by us; but it has always been impugned, and to keep on repeating it is not to prove it. Perhaps the issue may be put more clearly by saying that it seems arbitrary and unjustifiable to dis sever a 'truth' which admittedly comes about through a *conjunction* of 'subjective' and 'objective' factors, and to assert that the second *alone* of these makes it 'true.'

One of my criticisms concerned the ambiguity of Professor Russell's use of the word 'determined.' I wanted to know whether or not it meant 'fully determined.' For if it does, Professor Russell's illustration seems to fail because the situation could not really be so rigid as to admit of no alternatives of action; if it does not, his analysis does *not* exclude a subjective contribution to its reality made by the agent. In his reply Professor Russell does not answer my inquiry, but uses the word over again just as ambiguously as before!

He rests, however, his final appeal on the meaning of the phrases 'lost' and 'know the way out.' The meaning I assigned to being 'lost' is, he admits, consistent with pragmatism, but it strikes him as a *reductio ad absurdum*. But he clearly has never heard the story of the steward who asked his captain whether a thing was lost *if one knew where it was*. "Of course not, you fool." "Then your silver teapot, sir, is not lost; for I marked the place where it slipped out of my hands and fell overboard!"

I fear Professor Russell, therefore, has not observed how sadly ambiguous are the phrases we have been discussing. I had said

⁴ Vol. IV., p. 43.

that any one who did not care where he was or whither he went could not be 'lost'—meaning, of course, *subjectively*. He could not feel 'lost.' But, of course, Professor Russell might be very anxious about him, if the 'lost' one was a child of his who failed to turn up for supper. Clearly the situation, and the words which describe it, vary according to the point of view from which they are regarded. Of course, if Professor Russell can lay it down as an absolute definition applicable to all cases that 'lost' means '*not knowing the way out,*' he could prove his point. But he clearly has that rare and precious thing, the universal consensus of mankind, against him on this question. We are all in the position of the child that neither knows where it is, nor cares whither it goes. We are *all* 'lost,' if 'lost' can mean nothing but 'not knowing where you are,' absolutely and without regard to human purposes. For no one does actually know the absolute position of the earth in space at any given moment. And no one cares! For it makes no difference to any of our present purposes, and the relative knowledge we have is *true enough* for us.

Clearly, therefore, the phrase 'knowing the way out' can, much like 'lost,' be interpreted pragmatically. It must mean 'knowing how to act so as to get out.' And so in Professor Russell's own example. If he had chanced to fall into a pit of his own digging, and broken his back, he would find that the most perfect map of its details and the most complete knowledge of its structure would not amount to 'knowing the way out' of the situation. I greatly fear that despite his accurate 'knowledge' of the longitude and latitude of his pit, his friends would give him up for 'lost,' and that when his blanched bones were ultimately found poring over his pathetically useless 'map,' any one who protested that he had never been 'lost,' because he had to the last 'known the way out,' would be suspected of heartless mockery rather than of a firm grasp of the true theory of truth.

II

I have more difficulty in dealing with Professor Russell's response to the pragmatic cure of skepticism recommended to him, because his reasoning seems to me somewhat elliptical and obscure in places. I gather, however, that he claims to possess (p. 241) what is denied to me and what I understand some hundreds of intellectualist philosophers are at the present time anxiously seeking, *viz.*, a clear and consistent conception of the intellectualistic meaning of 'truth.' This evidently imposes on him the obligation of taking the earliest opportunity of enlightening the world. And, more

particularly, he should tell us how 'the truth of a truth' and 'that which produces in his mind the certainty of this truth' manage to be 'quite distinct and separate' despite the fact that he can never arrive at the first except by way of the second. Assurances also are needed to show that his somewhat concise references to the pragmatic doctrine of truth do not conceal serious misapprehensions. To say, *e. g.*, that 'pragmatism identifies truth with satisfactory experience' may, perhaps, pass muster as a rough reference. But for purposes of exact discussion it is surely necessary to explain that the 'truth' (claim), which is tried in order to see whether it will bring satisfaction, is different (or, at least, in a different condition) from the 'truth' which has been validated by the satisfaction it has brought.

Now I can not find that Professor Russell's language anywhere recognizes this vital distinction, and so do not feel sure how far (if at all) he perceives it. If he does, he should surely observe that to say that 'the proof of the pudding is in the eating' refers not to the process of eating, but to its consequences, the nutrition, and so his inference should run, 'therefore the *nourishment* is what makes the pudding good to eat.' So interpreting these maxims, I fail to see any absurdity in them, and can only suppose that the ambiguity of 'eating' has deceived Professor Russell. Similarly, if we abstract from all problems of digestion and turn the maxim into a mere question of taste, it seems quite possible to interpret it, 'the test of the pudding is in the taste when eaten; therefore, this taste is what makes it "good to eat." ' Or, to abandon these over-dazzling metaphors, the proving of a truth (= claim) comes in the satisfactory experience to which its assumption leads: this satisfactory experience is what makes the 'truth' valid. I can not help thinking that Professor Russell's difficulties arise entirely from a refusal to take 'truth' simply as a human valuation, while those of his readers arise from his reticence about his own conception of 'truth.'

I am still more puzzled by what purports to be Professor Russell's answer to my inquiry whether he recognized the existence of ultimate choices. Nor can I quite understand how Professor Russell can know *a priori* that by trying the pragmatic interpretation of truth as an intellectual hypothesis he can not assuage his 'theoretic' doubts. It is clear that he considers himself debarred from trying this intellectual experiment. But why? Is the reason merely that his devotion to his meaning of truth, of which he makes such a sacred mystery, is such that he can not bear even to think of another? If so, one can but admire his heroic fidelity to a mistress who has avowedly abandoned him and thrown herself into the arms of the skeptic. Or does the trouble arise from the fact that even to

experiment with a new sense of truth involves a provisional adoption of it, and that if the experiment succeeds, it must establish a new sense of 'truth,' which, as superseding the old, will naturally not be 'true' in the old sense? If so, Professor Russell's position will be just about as reasonable as that of a sick man who, while admitting that the conventional 'cures' failed to cure him, yet declined to try a new one on the ground that if it succeeded it could not be a 'cure' in the same sense as the old ones.

A less determined doubter, however, would probably consent to regard the prospective success of an experiment as a reason for making it rather than for abstaining from it. He would not, therefore, feel it a hardship to pass from an *unsatisfactory* interpretation of truth to one more satisfying. Nor would he find it impossible to *combine* the second, third and fourth of the motives separated by Professor Russell on p. 242. He might, that is, find doubt psychologically irksome, and so consent to try an alternative. This willingness to experiment with the pragmatic sense of truth might then lead to his finding his whole experience so agreeably transformed that his 'philosophic doubts,' being no longer nourished by his belief in a 'theoretic' truth and a 'logical understanding' calculated to evoke doubt in the most uncritical breast, would die of inanition, until finally the whole impotent phraseology of his old self-contradictory beliefs might come to seem an unreal and futile figment.

Of course, however, if he does not want to give up his skepticism, if he enjoys it and it really satisfies him, nothing of the sort will happen. Nor do I see what could *compel* him to change his cognitive attitude. A skeptic who enjoys his skepticism has a doctrine which is *pragmatically true* for him. Any one can be as skeptical, as he can be unreasonable or inconsistent, as he pleases. The only advantage the pragmatist has over the dogmatist in dealing with such folk is that he is not bound to make useless attempts to convince them, and can leave them alone with a good conscience. Pragmatism is a very humane and tolerant philosophy. It does not fulminate threats of intellectual damnation against the heretics who scorn the eternal verities. It simply leaves them to take the consequences which their theories must entail in practise. The rationalist, on the other hand, is bound to waste his energies upon such creatures. He must aim at bringing about the universal agreement which his belief in 'reason' presupposes, under penalty of finding that otherwise the meanest dissentient, and the least discrepancy, form conclusive refutations of his theory.⁵

⁵ Cf. 'Studies in Humanism,' Ch. XII., § 10.

Now how far, if at all, these remarks apply to Professor Russell I shall only be able to determine when he answers my questions. I do not know whether he believes in choices. I do not know whether he likes being a skeptic, or even how seriously he is one. I do not know how he understands skepticism, or how dogmatically he holds it. I do not know whether he deems it insufficient for pragmatism to prove itself true according to its own understanding of truth, or insists that it must do so in some sense of which he alone possesses the secret. I do not know why he prescribes these strange conditions. I do not know why it should vex him to think that in the end 'truth' and satisfaction may depend upon the human attitude and point of view, or astonish him to discover that if men choose to speak different languages they can not possibly understand each other and had much better stop quarreling. But it distresses me to notice how prone philosophers of the rationalist persuasion are becoming to declare that reasoning is vain.⁶ Professor Russell's conclusion about the pragmatic heresy seems to be almost verbally identical with Mr. Joachim's about the realist heresy. Both admit that the views which they (nevertheless) attack are not internally refutable; both, after firing away their ammunition, prohibit their opponents from arguing with them. If this be skepticism, it is skepticism which has been carried to the length of doubting its own ability to defend its position. But one gets a feeling that it may be only disconcerted dogmatism in disguise, resenting its inability to extort the assent of all minds by the might of a 'reason' which it has woefully misconstrued. For the present, however, it will probably suffice to call upon the recording cherub, who smiles aloft at the contentions of philosophers, to take note of the fact that Professor Russell 'declines to take' a remedy, which he judges to be worse than his disease, *a priori* and without trial.

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A LAST WORD TO DR. SCHILLER

DR. SCHILLER has made what seems to me a very surprising discovery, namely, that in my second article in reply to his criticism I have widely departed from my original position, that my supposed man's idea was true for no other reason than that it agreed with his environment.

According to Dr. Schiller's interpretation of my statements in

⁶ Cf. Mr. Bertrand Russell in *Mind*, Vol. XV., pp. 532-3.

my second article, I admit that only in *part* is the truth of an idea determined by objective conditions; that in part the truth of an idea is determined by the subject.

Now, I must confess that to extort such a meaning from my language is a feat of exegesis rarely seen, even in the field of philosophical criticism. Now, what are the facts? In my first article, my contention was that the lost man's solution of his practical problem depended upon his idea of the environmental conditions in which he was at the time, and that this man's idea was true for no other reason than its agreement with these objective conditions.

In replying to Dr. Schiller's objections, I allowed him to put in the place of what he had called a 'babe in the woods' any sort of man he desired; and I maintained that, whatever practical problem this man might have presented to him, that problem could be solved only on the same condition on which the solution of the problem I had supposed was solved, namely, the agreement of the man's idea with objective conditions, which, of course, this man's purpose did not constitute or determine. I availed myself of my critic's admission that some *part* of the total reality of the given situation was not determined by this man's purpose or idea; and my contention was that it was *just this part* of the total reality which determined which idea should be true and, because true, be able to lead into the desirable experiences of safety, shelter and satisfaction of hunger.

Now, how my critic can manage to make out of these statements a substantial abandonment of my original position is, I confess, beyond my comprehension.

My critic charges me with an ambiguity in the use of the term 'determined,' in that I decline to say whether I mean *fully* or only *partially* determined.

I had said in my original article that the traveler's idea of his environment was true for no other reason than that he thought this environment as it in fact was when thought. I had supposed it was unnecessary to add that the environment *fully* determined the truth of his idea. However, to set my critic's mind at rest on that point, I will say that the truth of an idea *is* fully or *wholly* determined by its agreement with reality.

Dr. Schiller's attempt to escape from the logical consequence of his pragmatic meaning of 'being lost' is, I think, hardly a success. He will mean by being lost, 'the man feels lost.' Pray, what does this mean? Does it mean (1) that he is simply aware or immediately knows that he is lost? In that case, the being lost remains as objective a fact as it was before. (2) Does he mean the man feels in a certain way *about* the fact of his being lost, that this fact gives

him apprehension, fear, distress of mind, etc.? In that case, the being lost and the emotions excited by this fact are quite distinct things; and being lost is no merely *subjective* fact. (3) Does Dr. Schiller mean that the man feels his impotence, his physical inability to get out of the situation—to shelter, or food, or home? Apparently this is Dr. Schiller's meaning, for he proceeds to exhibit me as a lost man in my self-dugged pit, with a broken back and with a map of the forest in my hands, and yet a lost man, both to myself and to my friends; and lost for no other reason than that, owing to my damaged anatomy, I can not get out of that pit. Let me suppose that Dr. Schiller should go into London some day, and be taken ill and be conveyed to a hospital; let me suppose that he knows London as well as I do my little town among the Berkshire hills, that he knows the way to his home while in the hospital; that his friends likewise know where he is; would Dr. Schiller think he had truthfully described his situation by saying he was lost in the city of London?

My critic objects that I have failed to recognize what he regards as 'a vital distinction,' namely, that between the truth, or the truth-claim, of an idea and the validated truth-claim, or the truth after it is validated. Now, I admit that I have not recognized the sort of distinction he tries to establish, and for the reason that no such distinction can be made out by a consistent pragmatist. For the intellectualistic meaning of truth, there are two distinctions which are both significant and important. (a) The distinction between the fact that a given idea is true and our certainty, or knowledge, of this fact. (b) The distinction between the truth of an idea and a verifying process by means of which the knowledge of this truth is attained. Now, my contention is that pragmatism can make no 'vital' or significant distinction between the truth of an idea and its verification. For consistent pragmatism the verity of an idea is its verification. The pragmatist's *truth* is a thing that is *made*, and the only distinction that can be admitted is that between the beginning of this process of truth-making and the completion of the same process, between an idea's being potentially true and its being actually true.

In concluding this last word to Dr. Schiller, I will, as briefly as possible, answer what are, in effect, questions put to me.

1. Do I believe in choices? I certainly do so believe, and I believe that they take place between genuine alternatives.

2. Do I like being a skeptic, and how serious am I in my skepticism? Well, I sometimes wish I could be as certain of some things as some of my pragmatist friends appear to be; but, on the whole, I am reconciled to our human ignorance and absence of theoretic

certainly touching matters of most momentous import to our lives. I am willing to remain theoretically uncertain and to make the venture of faith, and to wait the issue of that venture.

3. Do I know what skepticism means? I am by no means sure that I know what Dr. Schiller means by skepticism, but I think I can tell what the philosophic doubt about which I have written somewhat means. To me this doubt means a state of mind in which, because of the absence of logically compelling evidence, one can conceive a given subject-matter otherwise than for practical reasons he *does* choose to think it. I mean that, in reference to some matters, one can doubt what one is willing to treat as true or fact.

4. Do I deem it insufficient for pragmatism to prove itself true according to its own understanding of truth? I do not see how a pragmatist can reasonably undertake to convince any one by reasoning that his doctrine is true. He can only exhort others to become pragmatists in some other way than by reasoning oneself into the acceptance of *his* truth.

The pragmatist has so changed the meaning of the terms truth, true, verification, etc., that there can be no such thing as obeying his invitation to the intellectualist, 'Come, let us reason *together*.'

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ULTIMA RATIO?

IT appears from Professor Russell's last reply (1) that the ambiguity of language has once more defeated a sincere attempt of philosophers to understand each other. It certainly appeared to me that when Professor Russell declared (in Vol. III., p. 601) that an idea was true 'for no other reason' than that it agreed with an independently given reality, he meant to assert that nothing else mattered, and utterly to deny that human attitudes and ways of taking a situation had any bearing upon its 'truth.' Whereupon I ventured to point out that even in extreme cases such human attitudes *did* affect the description called 'true.' In Vol. IV., No. 9, however, Professor Russell clearly seemed to assert only that its relation to 'independent' reality was his sole reason for calling the operative idea 'true,' leaving it in doubt whether or not he denied the influence of the human attitude upon the description of a situation. To convey this latter meaning to my mind, he should have stressed the 'true' in his original statement. Had he done this, I should promptly have inquired (as I do now) whether he denied the relevance of the

human attitude to the 'truth' of a situation. For what I wanted to know (and still desiderate) is whether Professor Russell's doctrine is that the 'objective' conditions *alone* affect the 'truth' of a cognitive situation, or whether subjective conditions also are allowed to enter into it, though it is in virtue of the objective conditions alone that the predicate 'true' becomes applicable to it. The former of these interpretations clearly goes much farther, and that it is manifestly false was what the example of the 'Pragmatic Babe' was designed to illustrate:¹ the latter, which I recognized, of course, as the position taken up by Professor Russell in Vol. IV., No. 9, only seems to me an essentially arbitrary and unproved assertion (as I remarked in the third paragraph of my first paper in this number), which well illustrates the divergence between the pragmatist and the intellectualist use of the term 'true.' But I am quite content to leave the matter there, if Professor Russell will only note that from first to last he has given us *no* information as to how *he* proposes to deal with the subjective evaluation of the objective conditions, and has *wrongly* attributed to pragmatism an unqualified denial of every sort of objectivity, however provisional and derivative.

(2) I am also quite content with Professor Russell's present declaration that by 'determined' he means 'fully and wholly determined' by the objective conditions. For I can now defy him to adduce any situation which *is* so determined as to leave an intelligent agent no alternatives whatsoever. And I need only add that inability to adduce such a situation must be regarded as a fatal objection to the intellectualist analysis of cognitive situations. It also seems to me that Professor Russell has here missed a grand opportunity of applying the belief in the reality of choices which, I am now glad to learn, he still retains.

(3) As regards the meaning of the phrases 'being lost' and 'not knowing the way out,' my humble purpose so far has merely been to convince Professor Russell that they are ambiguous and quite susceptible of a pragmatic interpretation, and that here also he has been blind to the subjective side of the question. But as the result seems merely to have been to deepen the confusion, it is now, perhaps, time to state how pragmatism would account for the ambiguity.

The fact seems to be that in ordinary life and language we make no distinction between a 'truth' which is actually functional and one which is merely potentially so. The truths which, in Professor James's admirable phrase,² have gone into 'cold-storage' and those which are glowing with the heat of battle are alike called truths.

¹ Vol. IV., p. 42.

² 'Pragmatism,' p. 231.

The reason for slurring over this difference is, of course, itself pragmatic; it is unnecessary, and even inconvenient, to distinguish them for ordinary purposes. But philosophically it is vital to observe the subtle alternations which occur in the values of truths as a situation develops.

For example, to take Professor Russell's pet case. If he is wandering alone in a wilderness where he 'knows the way out,' his knowledge is functional, and would be judged to be 'true' by all. But if he falls and breaks his leg, it at once becomes 'potential.' He can, that is, no longer *act on it*, and it becomes a question how long it will continue to be called 'true.' If no help comes, he will gradually come to realize that under these circumstances it is no longer relevant to the 'facts' of his life, and no longer performs its normal function of guiding action, and therefore is no longer worthy of the name of 'truth.' He is driven to admit that he no longer 'knows the way out' in any real sense, that his 'knowledge' is a mockery, and that he must give himself up for 'lost.' But now suppose that he is found by a well-equipped party of travelers, who have 'lost' their way, but are physically able to proceed. At once the 'knowledge' of Professor Russell and the physical powers of his rescuers become 'useful' again and relevant to the situation. They combine, the knowledge becomes functional, and, by enabling both parties to achieve their purposes, saves the situation. This sketch of the actual functioning of our knowledge deserves, no doubt, to be drawn out at length, but it should suffice to explain why it seems to us so unwarrantable to conceive potential truths as essentially non-functional and useless. Our complaint is that intellectualism has taken too narrow and abstract a view of their nature, and failed to see what common speech recognizes and reveals in its very inconsistencies and ambiguities, *viz.*, the relation of meaning to purpose.

(4) As regards the relation of the intellectualist and the pragmatist meanings of 'truth,' it is rapidly becoming clear both that, and why, the former will not accept the pragmatic distinction between truth-claims and validated truths. For, as Professor Russell has so admirably shown,³ the intellectualist really holds that a 'truth' does not need to be validated to become true. The distinction, therefore, is to him irrelevant. He must believe in unverifiable truth by the logic of his position. To all this I cordially assent, though I like to speculate as to what will happen to intellectualism when this is generally perceived.

On the other hand, it should also be clearly recognized that both the distinctions which Professor Russell regards as significant and

³ Vol. IV., p. 295.

important must be nugatory to a pragmatist. He can not separate the truth of an idea from our knowledge of its truth, or from the verifying process by which its truth is established. As neither distinction has any pragmatic value, they must seem to him to be devoid of sense. Unverifiable 'truths' he can not regard as truths at all: verity is verification, actual or potential, and again it gives me great pleasure to agree on this point with Professor Russell.⁴

(5) But does it follow either (a) that pragmatic propaganda is reduced to mere emotional exhortation, or (b) that both sides must stop reasoning because they have caught sight of the ultimate differences?

(a) Certainly not the former, I should say. For the pragmatic analysis of truth really starts from ground common to it and intellectualism, that of common usage and scientific method. It professes to analyze what we all mean when we predicate 'truth,' and merely to carry self-conscious analysis farther than it is necessary to do for scientific purposes, or possible to do with uncriticized prejudices. Its contention is that intellectualism involves a profound misconstruction of this common ground, that its vulgar forms really rest on a failure (or a refusal) to carry analysis as far as it can and ought to be carried, while the more refined attempts at intellectualist construction logically lead to the most gorgeous paradoxes. Hence we hold that *there is not really any such thing as a coherent intellectualist theory of truth*; and we suspect that no such thing is possible. We have challenged our opponents to produce one, but nothing has been produced that is even internally coherent. Hence it is possible that when intellectualist philosophers realize that they can neither give a rational account of the faith that is in them nor refute the pragmatic analysis, they may eventually conclude that the pragmatic position is, after all, the more rational.

(b) With regard to the second point, the situation seems more doubtful. For one must certainly agree with Professors James⁵ and Russell that the differences of philosophers are largely temperamental at bottom. Ultimate philosophies depend in the last resort on sheer subjective choices between alternatives. Not that I should call these

⁴There is manifestly nothing in Mr. J. B. Pratt's attempt (in Vol. IV., p. 320) to treat verifiability and verification as antagonistic, and the former as distinctive of intellectualism. For (1) it is impossible to separate verifiability from verification—the potentiality does not exist apart from the actuality from which it is an *ex post facto* inference. A claim to truth, therefore, can only be regarded as verifiable on the strength of past experiences of verifications, and a 'verifiable' truth which is *never* verified is really unverifiable. Hence (2) *unverifiability* is the distinctive mark of a consistently intellectualist view of truth.

⁵'Pragmatism,' lectures I. and VIII.

choices arbitrary and irrational, though I can see that they may very well appear so to an intellectualist: for, after all, the alternatives may spring from an equality of reasons. I should only regard them as excellently illustrating the 'primacy of will,' and so am not disposed to resent their existence. But for reasons of which I have stated some above, I doubt whether we have yet come anywhere near this ultimate ground of personal choice in the pragmatic controversy. If, however, Professor Russell should think otherwise, I too am quite content to let the matter rest in its present posture.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Development of Symbolic Logic: a Critical-historical Study of the Logical Calculus. A. T. SHEARMAN. London: Williams & Norgate. 1906. Pp. 242.

In the preface the author states that "the form that the present work has taken is due to some correspondence which I had with Mr. W. E. Johnson in the year 1903. He pointed out to me the error of thinking of the various symbolic systems as being radically distinct, and as competing with one another for general acceptance. Rather, he held, it is correct to adopt the view that there is available at the present time what may be called *the* logical calculus, and that towards the creation of this calculus most symbolists have contributed.

"This idea has been worked out in the following pages. I have traced the growth of the subject from the time when Boole originated his generalization to the time when Mr. Russell, pursuing for the most part the lines laid down by Peano, showed how to deal with a vastly wider range of problems than Boole ever considered. My attention has been occupied, that is to say, upon the questions to whom we are most indebted for those rules of procedure that may be said now to constitute the calculus, what important differences of opinion have arisen as the subject has been gradually thought out, and which of the conflicting views we find it correct to adopt. The investigation has thus been quite as much critical as historical, for, in demonstrating who have contributed to the creation of the logical calculus, it has been necessary constantly to point out, in the first place, why certain views have to be rejected as being incorrect, and secondly, wherein one of two suggestions, both of which are excellent, shows an advance upon the other.

"Portions of some of the chapters have appeared in a paper which has been published in the *Proceedings of the Aristotelian Society*."

To quote Mr. Shearman again, his order of exposition is as follows:

"In the first three chapters I suppose that we are confronted with a complicated set of premises and are required to draw a certain conclusion from them, or that we are given a certain conclusion and are required to assign premises from which it may have been drawn. At each stage in the solution I shall endeavor to show which logician it is who has proposed the best method of procedure to be adopted at that point. In this way I hope to make clear that there has been real development from the time of Boole, and that the principal contributors to the development are Venn, Schroeder, Keynes, Johnson, Mitchell, C. Ladd-Franklin and Peirce.

"Then in Chapter IV. I prove that those who have been engaged in elaborating the calculus were justified in proceeding by way of an extensive rather than by way of an intensive interpretation of the proposition." Chapter V. is occupied with Jevons and MacColl, both of whom 'have, indeed, proceeded by way of extension, but who have, in my opinion, fallen into serious errors.' "Up to this point the investigation is concerned with what may be called the ordinary symbolic logic, and with its ordinary employment. In the next chapter I refer (1) to the logicians who have shown how the principles that are utilized for the manipulation of propositions with single quantifications may also be utilized in the case of double and multiple quantifications; (2) to the view that, though such multiple quantifications may be successfully manipulated, it is not possible to treat copulæ in a general manner, and so arrive at such a logic as the expression 'logic of relatives' naturally suggests to the mind; and (3) to Frege, Peano and Russell, who have shown that, when certain distinctions are made which the older symbolists passed by as unimportant, and when a suitable interpretation is given to the conceptions of quantitative mathematics, both the comprehensiveness and the utility of symbolic logic are greatly increased. Finally, having thus traced the development of the subject, I devote a chapter to the consideration of the uses of symbolic logic, both in its less and in its more extended application."

To turn to a closer view, the first chapter deals with 'Symbols as Representing Terms and as Representing Propositions.' The author holds that, in the case of the problems of the earlier symbolic logic, "it makes no difference, so long as the appropriate rules are observed, whether we let our symbols stand for terms or for propositions. But, when we come to deal with the problems that are not included within the scope of the Boolean treatment, I admit that it is better to let symbols stand primarily for propositions."

Besides the question whether or not symbolic logic deals primarily or exclusively with propositions, is the question to what kind of propositions in any case it must confine itself. The author answers, 'with assertories only.' Other propositions, *e. g.*, 'the probably true,' are material with which the symbolist has nothing to do. In this case, 'for the simple reason that it does not exist.' The probability of an event can be measured, 'but the probability of the truth of a proposition has no meaning.'

A similar truth holds (as Mr. Johnson has made clear) regarding the manipulation of propositions respecting probabilities. Likewise, to the division (MacColl) of propositions into various classes besides the true and false, the author objects; 'this procedure is based on the fact that the considerations according to which such classifications are reached, all refer to the relation in which the thinker stands to the proposition, and not to the proposition itself.' For such facts new terms must be introduced. They are new propositions.

Chapter II. deals with 'Symbols of Operation.' The author discusses the uses of the symbols $+$, $-$ and \div ; and defends the use of the latter two. Although the minus sign is not absolutely necessary ('since subduction may always be expressed symbolically as restriction'), it is frequently more convenient to employ this sign. However, the sign is appropriate only as denoting subduction. Regarding the sign \div , our author asks, "Has this inverse process any rightful place in symbolic logic, or is it a survival of merely historical interest? I hold that for two reasons the process ought without hesitation to be retained. In the first place, the mental exercise involved in arriving at the comprehension of what is implied in the performance of such inverse operation is, as Venn maintains, of the greatest utility. And, in the second place, the operation is capable of yielding absolutely reliable results."

He next discusses the symbols used to express the indefinite element in the universal affirmative, *e. g.*, $\frac{O}{O}$, showing that in suggestiveness and usefulness there is little difference between them, but adding that $\frac{O}{O}$, if so used, must not be employed (Boole) to represent particular propositions.

How are particulars to be symbolized? Venn's way is best, that is, $xy = v$ or $xy > O$ (resembling Mrs. Ladd Franklin's xyV). To Venn we owe the recognition of the existential character of particulars, to Mrs. Ladd Franklin a convenient notation of them. The latter logician has not, however, succeeded in giving us formulæ 'that would deal with particulars with as much ease as the formulæ that Boole proposed for universals deal with these.' In short, 'she did not succeed in presenting a general treatment of the subject.'

How may hypotheticals be dealt with? "Venn and Boole can not in their class logic deal generally with the pure hypothetical, for their procedure is to express the premises of an argument as though these in every case denoted class relationship. But if we follow the course adopted by certain other logicians (MacColl, Johnson and Russell) and allow symbols to represent propositions rather than classes, the pure hypothetical can receive adequate treatment."

Chapter III. deals with the 'Process of Solution.' For the direct problem there are two methods, the analytical and the diagrammatic. Regarding the latter, after pointing out the steps forward taken by Keynes, Venn and Marquand, the author adds: "If the symbolist employs diagrams, he is guilty of a somewhat retrograde movement. For in the

case of a figure we have to a certain extent *to think* out the answer, whereas a genuine calculus supplies us with a mechanical contrivance by which results may be reached with no other thought than that which is required by a person who manipulates a machine."

In his consideration of the inverse problem, Mr. Shearman points out especially the important contribution of Keynes and of Mr. Johnson. "Mr. Johnson first of all shows clearly that, by a process of multiplying out, the inverse problem may be solved by a direct process, and that we are not, as Jevons maintains we are, here limited to a series of guesses."

One of the most interesting chapters is entitled 'A Calculus Based on Intension.' In this the author first examines Castillon's 'Sur un nouvel algorithme logique,' as being the most consistent attempt to base a calculus upon intension. He finds that Castillon was led into many and serious errors, and that a calculus can not be elaborated in the way he described. His calculus can make use only of universal affirmatives, real particulars (in which 'some' means 'some only') and universal negatives, of which the second and third are inconvertible. Moreover, 'it is not possible consistently to deal with hypotheticals.'

The author's conclusion is not that there can not be a calculus based on intension, but that it would lack naturalness and simplicity and would be far inferior to that which deals with classes directly.

Chapter V. examines the work of Jevons and of MacColl. Great as was Jevons's influence, his reputation 'must not be based upon the fact that he contributed in any important degree to the creation of symbolic logic,' nor has MacColl assisted in erecting this symbolic structure. Where MacColl differs from other symbolists, there he is in error. His 'two chief errors consist in his treatment of modal and kindred propositions, and in his doctrine of logical existence.' "All modal propositions may be reduced to assertories, and as such symbolic logic deals with them. Again, logical existence is not to be confused with phenomenal existence. There are not two worlds of discourse, but one, and within this two compartments, the real and the unreal." Mr. Shearman's own summary of the following chapter has already been quoted.

The final chapter gives us an eminently fair statement of the utility of symbolic logic, both to education and to science. True, symbolic logic 'does not lead us directly to any new truths in natural science.' This, however, does not mean that no new truth at all is won through its use.

Mr. Shearman's book is not one for a beginner, for it presupposes considerable acquaintance with the work of symbolists, in fact, of all the authors whose work is discussed. However, it is especially valuable at a time, such as the present, when there is great need of taking an account of stock of what has been done in symbolic logic and that in a way that could not be done by giving us one more text-book or treatise.

WALTER T. MARVIN.

La causalité en histoire. M. SIMIAND. *Bulletin de la Société française de Philosophie*, July, 1906. Pp. 245-290.

At the session of the Société française de Philosophie held last May, M. Simiand advanced the thesis that in so far as historians seek at all to explain events, their explanations can not differ in any essential from those offered by the natural sciences, without thereby being convicted of insufficiency or error. They must start from the position that the *same causes must always produce the same effects*.

Selecting illustrations chiefly from Seignobos's 'Histoire politique de l'Europe contemporaine,' a work which he regards as more free than most from the faults he describes, M. Simiand shows that in many passages which profess to be explanatory there is merely the description of a gradual change; as though the historian supposed that by making the steps of advance many and minute he thereby explained, at least in part, the occurrence of that advance. In other instances the same cause is found productive of different effects. Particularly, individuals are cited as the causes of very different acts. But it is evident that in such cases there is a confusion of cause with condition. The true cause can not produce different effects.

An event is only explained when the causation which is offered in explanation is offered as a particular case of a general law. But if we attempt to subsume the explanations offered by historians under general laws, we often find it impossible.

M. Simiand then offered the following rules to govern all historians in their explanations of events. First, define in general terms the precise effect for which an explanation is to be offered. Second, to distinguish the cause from the condition, observe that among the different antecedents of a phenomenon, that one is the cause which can be bound to it by the most general relation. For example, an explosion is *caused* by a sudden expansion of gas, that being the antecedent of *all* explosions; whereas the spark might be replaced by a shock, the powder by dynamite, etc. As corollaries of the last rule, we have: that the cause should be the *immediate* antecedent; and that the effect can have no other cause save that offered in explanation—the explanation will be reciprocal. These rules will result in eliminating 'explanations' that are mere descriptions of evolution; individuals should no more be cited as causes of events; and finally, neither imitation nor the purposes of men will be regarded as causes, nor, indeed, any general psychological factors, such as instincts and impulses.

The discussion that followed served to bring out M. Simiand's point, that he by no means asserted it to be the primary function of the historian to explain events. But in so far as he does offer explanations they must be of the same type as those of natural science. His contention that there is an unnecessary lack of accuracy, that explanations are offered by modern historians which are no explanations, was not opposed. And the reforms he recommended in method received tentative endorsement

from M. Lacombe and others, except as regards the explanatory value of such general psychological factors as those above cited.

M. Rauh, however, urged that scientific explanations are not all of one type. And here, it seems to me, lies the weakness of M. Simiand's position. Every event takes place, both as a particular case of a general law and as a part of a totality. From this distinction result two types of explanation, which may be indicated by such terms as momentum and direction, action and movement, formal and final, mechanical and teleological. It has been urged that no science is free from both types of explanation. The contention may be wrong, but certainly we are not in a position to ignore it, as M. Simiand would ignore it, particularly in the realm of history, where, if anywhere, the distinction is valid. Perhaps the real purport of his paper is to limit the use of the term explanation. In that case his statement is liable to serious misunderstanding; for it seems a perversion of terms to say, as he does, that an explosion is explained by the expansive power of gases, but is not explained by the motives of the man that puts match to powder. While his paper may well promote precision in offering general explanations of particular events, it is not likely to persuade historians that general explanations are the only ones they may offer.

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La méthode de Descartes. A. HANNEQUIN. *Revue de Métaphysique et de Morale*, November, 1906. Pp. 755-774.

This paper is an unfinished first chapter of a projected work on Descartes, which the talented author had been preparing for some years, the work having been repeatedly interrupted by the ravages of the disease that caused his untimely death last summer, July 5, 1906. The editor of the *Revue* expresses his appreciation of the young philosopher's promise and worth in a foot-note to the article here reviewed, and also publishes, in the same number, another fragment by him, on the philosophy of Leibniz, which was also to have introduced a projected work.

The revolution which Descartes accomplished in philosophy was a necessary consequence of the revolution which Galileo had brought about in science. If the experimental method is specially characteristic of modern science, this is but the result of the need first voiced by Descartes, but felt by all investigators of rank, the need, namely, of applying mathematics universally to the solution of scientific problems. Descartes placed himself at the center of this new view of things, and developed a theory of knowledge that for the first time clearly exhibited the true relation between thought and things, giving to mathematics the supreme methodological position it deserves.

The *Regulæ* of Descartes contain the first exposition of this method, and constitute, in the opinion of Hannequin, the most valuable source for the understanding of its nature. To reach knowledge, or certainty, which are convertible terms, the human mind avails itself of only one method.

Mathematics, since it admittedly gives us certain knowledge, must disclose the clue to this method. Here we find only two conditions under which certainty is found, intuition and deduction, both of which, however, ultimately reduce to one, *viz.*, intuition. Intuition is not imagination or perception, but rational insight into the nature of an object immediately apprehended as simple and distinct. Hence the object is either apprehended truly, or not at all; error is excluded. Deduction presupposes an intuition, from which it passes immediately and by necessity to another term. It is the process by which the mind makes knowledge whose certainty is not in itself evident, to rest upon self-evident truth. Deduction is in a sense only intuition, but it requires a *movement* of the mind from one term to another, and can thus only exist by the aid of memory. It consists, not in the intuition of a second term, but in the intuition of a relation as making this second term necessarily dependent on the first, as in the case of an arithmetical progression. According to the usually accepted theory of the judgment, it simply renders explicit a preexistent but implicit relation between preexistent terms. But according to Descartes's theory of the judgment, it is a process of *deriving* a second term by means of a relation. The relation determines the succeeding terms, not the terms the relation. In Descartes the judgment is an act of constitutive thought, first by intuition positing a first term, and then by means of a relation giving this first term a complement, or a series of complements, which without the act of judgment would not exist. It is not the syllogism, but the judgment as thus defined, which constitutes the essence of thought.

Mathematical deduction is never syllogistic. Only two concepts are basal in mathematics, order and magnitude. Order requires no middle term for its derivation, since each element follows immediately upon its predecessor. And magnitude, while it requires for its expression a unit, which appears to be a third or middle term, nevertheless presents but a superficial similarity to the syllogistic process. The syllogistic middle is always a species, the mathematical unit is never a species. Descartes has thus hurled King Syllogism from his usurper's throne in the realm of knowledge, and made way instead for the rightful heir and claimant, mathematical induction.

The article, of which I have in the above attempted to give a summary, is written in a vivacious and lucid style. A criticism of its content would be a criticism of Descartes, and quite out of place in this review of a fragment published as a memorial.

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Die Bedeutung der nichteuklidischen Geometrie in ihrem Verhältniss zu Kant's Theorie der mathematischen Erkenntniss. W. MEINECKE. *Kantstudien*, June, 1906. Pp. 209-232.

The impossibility of proving the parallel axiom was the starting-point of the so-called non-Euclidean geometry. Lobachevski's method

of supposing that this axiom is false leads to sets of theorems which are contradictionless among themselves, though widely different from the theorems of ordinary geometry. These different systems are characterized by certain constants which are of the dimensions of a distance. Lobachevski tried to determine this constant for empirical space by measuring the parallax of Sirius and he found that triangles, the sides of which are of the order of magnitude of the radius of the orbit of the earth, do not show an appreciable difference from the triangles of Euclidean geometry. Geometry, then, is based on experience and its theorems have only comparative generality.

Against this argumentation Meinecke raises the question: How is it possible that sciences, which use mathematics as their basis, can support the validity of mathematical propositions? Their validity can be demonstrated only by an epistemological inquiry into the origin of mathematical knowledge. Such an inquiry seems the more important in view of the fact that the different systems of geometry, which were stated recently, apparently do not show a systematic order of their axioms. If we abstract from our ideas everything that corresponds to sensation, there remains time and space which are the forms of pure sensitivity. Kant proves their apriority by the impossibility of getting an intuition of other spatial or temporal forms, but Helmholtz holds that one actually may acquire the intuition of other spaces. The view of a non-Euclidean space, as described by Helmholtz, is nothing but Beltrami's representation of non-Euclidean in Euclidean space. The author tells from his own experience that he too believes he has the non-Euclidean space intuition, but whenever he tries to bring the object of his imagination into the focus of his attention, so as to see the hyperbolic parallels approach asymptotically, he was prevented from doing so by a feeling of dizziness similar to that which we have in dreams when we stand at the edge of a precipice. Of all the geometries there is only one, the Euclidean, which is real.

Philosophy of mathematics may start from Kant, but it must go beyond Kant. At first the rule must be stated that mathematics must not contradict logic, and since time and space are the objects of mathematics, one obtains the definition: Mathematics is the application of the logical calculus to the forms of pure intuition. The theorems of mathematics are *a priori* valid because mathematics deals with the pure forms of intuition. There are two branches of mathematics—analysis and geometry—corresponding to the two forms of pure intuition. Analysis is built on the notion of number. This notion is produced by the successive synthesis of the unit in time. The author finds at this point an obscurity in Kant's theory, which, however, does not impair its validity. Geometry is obtained by a further reduction of the logical possibilities, subjecting the conclusions to the conditions of space. The fact that the perception of space indirectly depends on the perception of time, explains why geometry never contradicts and never can contradict the results of calculus. It

also answers Lucka's question why it is possible to apply analysis to space. From this follows that there is among the axioms of geometry one which implies a temporal relation. The author comes to the conclusion that Kant's theory of time and space can explain the entire system of axioms which are the foundations of geometry, and that it shows also the possibility of non-Euclidean geometry as a part of the system. It may be required to deduce the axioms of geometry from the forms of space intuition.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. April, 1907. *Anarchisme et individualisme: Essai de psychologie sociale* (pp. 337-365): G. PALANTE. — The terms anarchism and individualism are usually confused. The former denotes a social system or economic doctrine which is moralistic, idealistic and optimistic; the latter an intellectual or sentimental attitude of an individual toward society; it is pessimistic, anti-dogmatic and disinclined to proselytism. At present anarchism seems to be dissolving into various forms of socialism. Individualism has a perennial character for psychological reasons, and will remain an indestructible form of human sensibility. *De l'esprit magique à l'esprit scientifique* (conclusion) (pp. 366-382): J. SAGERET. — The magic spirit survives in our day in religion, mysticism and poetry. It is opposed to the scientific spirit through its subjective character and corresponds to a logic of feelings, as opposed to ordinary logic. The scientific spirit is objective, amoral and 'asocial.' *La transformation des idées et le public* (pp. 383-408): A. BAUER. — The author traces certain transformations of fundamental ideas in esthetics, ethics, religion, philosophy and law. The innovations take hold and give rise to antinomies through certain dispositions of the public sentiment with which they agree. *Revue critique: The origin and development of moral ideas, d'après Westermarck*: P. FAUCONNET. *Analyses et comptes rendus*. Prudhomme, *Psychologie du libre arbitre*: L. DUGAS. *Studies in Philosophy and Psychology* (by former students of Charles Garman): G. BOS. Della Valle, *La psicogenesi della coscienza*: J. SEGOND. Elie Blanc, *Dictionnaire de philosophie ancienne, moderne et contemporaine*: ANDRÉ LALANDE. Tönnies, *Philosophische Terminologie in Psychologisch-Soziologischer Ansicht*: LALANDE. Grasset, *Demifous et demiresponsables*: G. L. DUPRAT. Moutin, *Le magnétisme humain*: DUPRAT. Masselon, *La mélancholie*: PH. CHASLIN. Francillon, *Essai sur la puberté chez la femme*: CHASLIN. Blondel, *Les automutilateurs*: H. WALLON. Senet, *Patologia del instinto de conservacion*: F. PÉRÈS. *Revue des périodiques étrangers*.

REVUE DE MÉTAPHYSIQUE ET DE MORALE. March, 1907. *Comment se pose le problème de Dieu* (pp. 129-170): E. LE ROY. — The proofs derived from the physical world for the most part are traced to

the assumption that a cause which is not a particular thing in the world must be another thing outside it, whereas there remains the possibility that it is a relation between those things. Those derived from the moral world may be classed as aspirations. The ontological proofs proper ignore the possibility that an idea may be self-contradictory. A constructive paper is to follow. *Note sur le problème du mal* (pp. 171-185): G. REMACLE.—Evil has existence without right to it, and so presupposes a free giver, himself without evil. We can not imitate God by creating evil, for we can only deposit what we have. *Sur l'introduction logique à la théorie des fonctions* (pp. 186-216): M. WINTER.—The logic of mathematics can not aid, apparently, in many fields of mathematics. The confidence of its exponents is misleading. *Arthur Hannequin et son œuvre* (pp. 217-255): J. GROSJEAN.—A detailed account of Hannequin's opinions regarding the history of philosophy and the logic of the sciences. His lovable personality and untimely death. *Le syndicalisme révolutionnaire* (pp. 256-272): F. CHALLAYE.—The second and closing criticism of the theory of world-wide industrial cooperation, directed largely to a defense of national life. *Livres nouveaux*: J. Delvolvé, *Religion, critique et philosophie positive chez Pierre Bayle*. J. Laponi, *L'hypnotisme et le spiritisme*. J. M. Baldwin, *Thought and Things*. Vol. I. *Revue et périodiques*.

- Hall, G. Stanley. *Aspects of Child Life and Education*. Papers by Professor G. Stanley Hall and some of his pupils. Boston: Ginn & Co. 1907. Pp. xii + 326. \$1.50.
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NOTES AND NEWS

THE *New York Medical Journal* for August 3 writes as follows on the morbid anatomy of mental confusion: "Cases of confusional insanity are beginning to be recognized by the French as distinct from the group of primary, organic dementias. In this they are following the lines laid down by Kraepelin some fifteen years ago. Recent investigations appear to demonstrate a certain relation existing between the disturbance of intellection present in these patients and certain changes in the cells of the cerebral cortex, and, less directly, but more constantly, certain morbid

conditions, notably pus collections or chronic inflammatory foci, in remote regions of the body, especially those affecting the pelvic organs. In patients suffering with light forms of mental confusion, a distinction can and should be made between the fundamental and the accessory manifestations of the mental disorder. Prominent among the fundamental manifestations are the disturbances of the perceptive faculties. These patients are in a state of uncertainty and doubt; they seem lost and undecided where to go. Hence arises the failure in orientation in time and space which is so characteristic of mental confusion. From it also arises the abulia, or deficient will power, which causes the slowness of movement and indecision. Among the accessory manifestations are occasional delirious phenomena. There may be also temporary exaltation, but more frequently depressive ideas prevail. Hallucinations are rare, but delusions are not infrequent. . . . Two pathological factors may be recognized in the class of cases under consideration. One is constant, and this is the presence of toxic elements in the organism; the other is accessory, and consists in the local changes in the cerebral cortex or, more specifically, a local swelling of cortical cells, the projection of the nuclei to the periphery, and the disappearance of chromatin granules (chromatolysis)."

IN his 'The Mind and the Brain,' Professor Binet writes as follows on the immediate objects of consciousness: "I believe it has required a long series of accepted observations for us to have arrived at this idea, now so natural in appearance, that the modifications produced in our nervous system are the only states of which we can have a direct consciousness." This statement called forth from the *Athenæum*, in a review of the book in its issue of August 3, the following comment: "Coming from a psychologist, a statement so clearly untrue to the facts can only make one reflect that on this question of external perception most of the really hopeless errors were committed by mere philosophers before the days of psychologic science, and that we ought not to be asked to believe in them all over again because psychologists are falling into the old traps. This particular 'idea' is only a confusion. The last things of which we have a direct consciousness are the modifications produced in our nervous system. The modifications are there, and without them we should not be conscious of the object—that is a very different story."

WE quote the following from Sir David Gill's address before the British Association: "By patient, long-continued labor in the minute sifting of numerical results, the grand discovery has been made that a great part of space, so far as we have visible knowledge of it, is occupied by two majestic streams of stars traveling in opposite directions. Accurate and minute measurement has given us some certain knowledge as to the distances of the stars within a certain limited portion of space, and in the cryptogram of their spectra has been deciphered the amazing truth that the stars of both streams are alike in design, alike in chemical constitution, and alike in process of development."

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE DOCTRINE OF THE EJECT

I. THE COMMON SENSE DOCTRINE

SOLIPSISM must really be a highly unnatural doctrine. We may discuss it for the sake of exhausting what may seem to be the logical possibilities in the case, or for the sake of making quite clear what is meant by the assertion of the existence of other minds. But we can hardly approach it with the feeling that it is a doctrine which investigation may compel us to accept, for, as a matter of fact, even those who urge it upon our notice do not accept it. It is an unnatural doctrine; children do not suppose themselves to be alone in the world; the plain man scouts the notion that other minds do not exist; the philosopher shares in their conviction.

The degree of clearness with which one may be conscious that one has a mind, may distinguish between it and the minds of others, and may realize the nature of the distinction, must vary with the degree of mental development of the individual. But all the three classes of human beings referred to, and the various classes which lie between them, concur in the one conclusion. He whose thinking is vague and unreflective vaguely and unreflectively recognizes the existence of other minds; he who makes sharper distinctions is more distinctly conscious of what he is doing when he is thinking about them; but one and all accept the fact that they have neighbors, and in so doing they give evidence of their sanity. If we are to attribute to the solipsist any existence at all, it seems that it must be an hypothetical existence. We have to say: A man *might* think so and so, and if he did he would be a solipsist.

It is interesting to note that even the professional skeptic has not found the doubt of other minds to be a promising field for his destructive activity. It is strange how late in the history of speculative thought the doctrine of the eject has come into prominence, and with it the problem of the existence of other minds. Men who were quite willing to doubt anything have attacked and seemingly demolished the external world, but it has not occurred to them to refuse minds to their neighbors.

Thus, we find, in the accounts of the Pyrrhonic skepticism,¹ the object of perception made the subject of the most varied assaults; and we note that one of the charges brought against it is, that it presents itself to different minds under differing guises. We remark that, at a later age, the inclusive sweep of Descartes's universal doubt seems to have missed the minds of other men;² for it is checked with the proofs of the existence of God and of the external world, and we are left to suppose that the whole battle has been won when these have been established. Still later, we see that Hume explicitly recognizes—as well he might, after the fact had been pointed out by Malebranche and Locke and Berkeley³—that our knowledge of other minds is not immediate, but rests upon an argument from analogy; but we find him dwelling upon the argument only for the sake of proving that brutes reason as well as men.⁴

To none of these men does it seem to have occurred to carry their doubt as far as, to some who have written since, it has seemed theoretically possible to carry it. Nor has the doubt been a live one even to those who in modern times have recognized its possibility. When Mill asked himself by what evidence he could know that there existed other sentient creatures, and tried to show that the fact could be established by following the usual rules of experimental inquiry,⁵ he may be said to have at least touched upon a doubt. But he did not harbor a doubt. Nor did Huxley, even though he said that it is impossible 'absolutely' to prove the presence or absence of consciousness in anything but one's own brain;⁶ nor did Clifford, who gave up the attempt to show how the inference to other minds can be 'justified,' but who made it, nevertheless, and built up the doctrine of the eject;⁷ nor does Strong, who has so recently told us that we have no rational ground for assuming that anything whatever exists outside our mind.⁸

The real problem never seems to be: Do other minds exist? We ask ourselves rather: How do we know it? or, With what degree of evidence do we know it? or, What other minds exist? or, What are other minds like?

Now, what I shall call the common sense doctrine of the eject maintains, that each of us knows directly his own thoughts and feel-

¹ See Diogenes Laertius, 'Pyrrho.'

² See the 'Discourse on Method' and 'Meditations.'

³ Malebranche, 'Recherche,' Book III., Part II., Chap. VII., § 5; Locke, 'Essay,' Book IV., Chap. III., § 27; Berkeley, 'Principles,' § 144.

⁴ Hume, 'Treatise,' Part III., § 16.

⁵ 'Examination of Sir William Hamilton's Philosophy,' Chapter XII.

⁶ 'Collected Essays,' Vol. I., p. 219. New York, 1902.

⁷ 'On the Nature of Things-in-Themselves.'

⁸ 'Why the Mind has a Body,' p. 218.

ings, that he is not conscious in the same way of the thoughts and feelings of others, and that it is by the bridge of an analogical argument that he is conducted to them. This has been set forth so many times that it seems hardly necessary to dwell upon it in detail. I may say briefly that the doctrine consists in the recognition of the fact that I am aware of my own mind and body directly—they are for me ‘object,’ in the sense of the word emphasized by Clifford—and I perceive a connection between them; I perceive other bodies whose behavior is more or less similar to that of my own; I attribute to them minds—ejects—which I suppose to be related to them as I am aware that my mind is related to my body. The ground of the inference is taken to be the observed similarity.

I do not call this the common sense doctrine for the purpose of enlisting sympathy in its behalf. I apply the name to it because it appears to be the doctrine to which man naturally tends as soon as he has attained to that measure of reflection which makes the problem of other minds a problem for him at all. Here and there a philosopher has opposed the doctrine, it is true; but we find it implicitly accepted in the dimly conscious reasonings of the child, frankly accepted by the plain man, adopted without question by the psychologist, and approved by philosophers who disagree with each other fundamentally upon other points.

It requires no high order of mental development in a child to enable it to distinguish between stripes laid upon its body and stripes laid upon the body of another; between the putting of sugar into its mouth and the putting of sugar into another mouth. And long before it has consciously reflected and become aware of its own process of reasoning, we can see that it recognizes the changes in other bodies as signs which may be made the basis of an inference. I have heard a child, who had been watching a locomotive engine puffing busily up and down on a side track, exclaim with the excitement of one making a discovery: “It’s alive!” “No, it is not alive,” said an older child. “Then why does it move about like that?” was the ready rejoinder. “He walks as though he were afraid of waking some one up,” remarked a boy of five, who stood with me before the cage of the ostrich in a zoological garden, and who observed with interest the peculiar teetering gait of the bird.

Children reason crudely and unreflectively, but they reason as older persons reason. They know that it is one thing to ‘feel cross’ and it is another to ‘look cross,’ and they even know that a man may not be as cross as he looks; *i. e.*, they recognize that there is some danger in the interpretation of the signs that are presented to them.

To be sure, children are not clearly conscious that other minds are to be regarded as excluded from their own; but we can not expect this distinction to be clear where so many distinctions are vaguely grasped—where, indeed, even the distinction between mind and body remains a dim one. What we should ask ourselves is, whether the distinction between ‘object’ and ‘eject’ can be found to be implicitly recognized by the human mind in the earlier stages of its development. To this question I think that we can give but the one answer.

When we come to the grown man, we find that he recognizes the distinction with a good deal of clearness, even though he has had no schooling in scientific psychology; and he knows that the contents of other minds are for him a matter of inference. He is well aware of the difference between experience of mental phenomena and experience of their signs. No psychologist has to inform him that he feels his own pain, and not that of his neighbor, thinks his own thoughts, and not those of another. He is clearly conscious of the risks one incurs in taking at their face value the indications of mind with which the words and actions of other men present him, and he is compelled to weigh their evidence every day. To tell him that he is aware of other minds as he is aware of his own would rightly strike him as absurd.

We must admit that, much of the time, he is not conscious of reasoning about the matter or of drawing inferences; but we must also recognize that he is not conscious, as a rule, when reading a book, that he is interpreting signs—is giving a meaning to marks upon paper. In each case, when the problem of interpretation becomes a difficult one, the nature of the process becomes apparent.

As to the psychologist, we may sum up the consensus of opinion which obtains in his field with the words: My own states are known to me immediately; I can know other minds only through inference from my own.⁹ This we may take as a commonplace of psychology; as a recognition of introspection and of the objective method generally accepted and employed without question.

To this doctrine that our knowledge of other minds rests upon

⁹ It would be wearisome to quote at length. I refer the reader to: Herbart, ‘Lehrbuch,’ *Einleitung*, § 1; Beneke, ‘Lehrbuch,’ *Einleitung*, § 1; Brentano, ‘Psychologie,’ Buch I., Cap. II., § 4; Wundt, ‘Physiologische Psychologie,’ Cap. I., § 1; Lipps, ‘Leitfaden,’ Cap. I., § 6; Höffding, ‘Outlines,’ I., 8; Spencer, ‘Principles,’ § 56; Sully, ‘Outlines,’ Chap. I.; Stout, ‘Analytic Psychology,’ Introduction, § 2; James, ‘Psychology,’ Chap. I.; Baldwin, ‘Senses and Intellect,’ Chap. I., § 1; Thorndike, ‘Elements,’ Chap. XXI., § 62. This list of references is taken almost at random from books which I happen to have under my hand at this writing. It might be indefinitely increased.

an argument from analogy, it may be objected that we find we have accepted the existence of other minds before we have consciously made the inference required, and long before we have reflected upon the justification of such a step. By the time that we have arrived at anything like a clear consciousness of ourselves as persons, we find ourselves recognizing that there are other persons more or less like us—we acknowledge ourselves members of a community. May we not argue from this that our knowledge of ourselves and our knowledge of others must be attained by just the same process? that we come to know others just as we come to know ourselves?

I think not. Let us see what the objection really amounts to.

Much is made in our day of the instinctive reactions of the infant, and of the phenomena of imitation. We all realize that it would be giving a poor account of the beginnings of a child's growth in the knowledge of itself and of others to say that it first frames a conscious purpose, then puts the purpose into execution, and, having noted the resulting physical expression, observes and interprets the similar actions of other bodies.

One is not born an old man. The whole mental life of the young child is, as I have indicated, vague and indefinite. Its first impulsive reactions to stimuli can not be called purposes in the strict sense of the word. Its instinctive imitation of the actions of those about it does not imply that it is aware of what is taking place in their minds when they perform such actions. Only gradually does its vague and blundering mental life grow into the more clearly conscious life of the developed mind.

Suppose that a young child has attained to sufficient development to smile in response to a smile. Does that mean that it is aware of the feeling that prompts a smile in another? Suppose that it has learned that it hurts to bite its finger. Does that necessarily mean that it knows that there is suffering when the finger of another is bitten? And even if we go farther and assume the development to be such that the sight of a smiling face will suggest to it happiness, or the sight of a bitten finger will suggest to it pain, although it be conscious that it is not itself smiling or is not itself suffering, does that imply that it is conscious that *another is happy or is in pain*, in the proper sense of those expressions?

Surely it need not imply so much. The fact that a child may associate pleasure or pain with the sight of some material thing not its own body certainly does not mean that it has a *direct* knowledge of the pleasure or pain of some other creature. The sight of a painted smile on the face of a doll may suggest pleasure; the sight of a fracture in a porcelain arm may suggest pain; but this does

not mean that the child is aware of the pleasures and pains of the doll as it is of its own. The doll has no pleasures and pains.

Nor need it be assumed that there is present an *indirect* or *representative* knowledge of the contents of another mind. It is only gradually that we come to a consciousness of the distinction between our own minds and other minds, as has been said above. At first this distinction does not seem to be grasped at all, and at this stage we can not say that one has any knowledge of another mind; then it is grasped dimly, as it appears to be by children who have progressed so far as to distinguish between another's pain and their own sorrow for another's pain; finally it is grasped clearly, and it is realized that my thought of another mind is never to be confused with another mind, and that the latter is for me a matter of inference.

We may not say that, the farther back we go toward the undistinguishing and unintelligent beginnings of our mental life, the more immediately are we aware of other minds. Ignorance of distinctions and of their significance is not knowledge. As a matter of fact, our knowledge of other minds grows in exactitude and in extent as our minds develop and grow critical. We strip the doll of its emotions altogether, and we learn not to attribute to the fly and to the spider the thoughts and feelings of human beings.

And in all this we follow the lead of the argument from analogy, recognizing that we have no other stepping-stone to a knowledge of other minds. That there is no other stepping-stone seems to me to be revealed even by the writings of those who have objected to this one. In the two papers to follow I intend to examine certain objections to the common sense doctrine; and the fact that men of learning and acuteness have found it possible to bring objections against it must be my excuse for discussing, as I have done, what to most persons must seem a matter scarcely calling for discussion.

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STANDARD TESTS OF ARITHMETICAL ASSOCIATIONS

WITH a view to determining their relative efficiency as measures of that type of controlled association exemplified by quickness at figures, three tests were employed which may be termed respectively the column test, the pair test and the increment test. In the column test the digits were arranged in columns of five digits each, the subject calling out as rapidly as possible the sum of each column of five. In the pair test series of two varying

figures were presented together and the subject called out the sum of the successive pairs. In the increment test a certain constant figure, in these experiments 4, is added to each of a series of figures ranging between 21 and 89. The actual figures composing all series were standardized according to a fixed method, and the amount of work done in a fixed time was in all cases taken as the standard of measurement. One minute was the usual time allowed, the work done in each 30 seconds being recorded. In the case of subject IV. and in one of the ten subjects the records are 30 and 15 second times multiplied by 2. These subjects worked so rapidly that they ordinarily completed the series in the longer interval. By this method the constancy of the individual association times is measured in the variability of the ratios of the first and second half-times independently of the diurnal variations. These ratios should, in the absence of fatigue and practise, approximate 1. It is the constancy of the ratio from day to day, however, that is significant independently of its average. The more constant the ratio the less variable and consequently the more efficient the measure of the individual association times. The ratio given is always in terms of the per cent. of the work done in the first half-time that is done in the second. Below 1 it indicates fatigue, above 1, practice. The results are from 50 records of each test, 10 records on four subjects and one record on each of ten subjects, the figures being as follows:

TABLE I.

	Average Ratios of 1st and 2d Half-times.			Diurnal Average in Amount of Work Done. Number of Associations in Specified Time.					
	Column Test.	Pair Test.	Increment Test.	Column Test.	Pair Test.	Column Test.	Pair Test.	Increment Test.	Column Test.
				<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>
I.	1.22	.99	.89	7.2	7.8	30.2	29.6	30.4	28.9
II.	1.04	1.01	.88	6.1	6.7	30.3	32.6	25.9	22.9
III.	1.06	.96	.93	5.0	5.0	29.6	28.5	16.0	15.0
IV.	1.05	1.05	.99	10.8	11.6	54.2	57.4	38.0	37.8
X.	1.05	.94	.90	7.5	8.2	33.4	31.0	22.8	24.4
Av.	1.08	.99	.92	7.3	7.9	35.5	35.8	26.6	25.9

Roman numerals refer to subjects; *a* and *b* refer to the 1st and 2d half-times; X. refers to the ten subjects.

The individuals seem to do slightly better in the second than in the first half in the column test, about the same in the pair test, while the increment test yields a certain amount of fatigue. In the diurnal averages there is illustrated much individual difference, and rather less correlation between the tests than one would have expected between measures that seem so closely related to a single ability. III., for example, is only slightly below the average in the pair test, but very much below it in the increment test. For practical purposes these records would have to be corrected for the

speaking speeds of the individuals, which vary a great deal, as has been previously shown. III., besides being an inferior adder, is a much slower speaker. This is an unessential factor here, since the experiments are not intended as a comparison of individuals, but of tests.

The true test of tests is found in their variability as illustrated below. The diurnal variations in the column test are not directly equably comparable with the others, since the individual measures are here themselves the average of five associations. As above, X. has no diurnal variation, the figures being simply the average for the ten subjects, but their results are here allowed to enter into the average. The number of errors made in each type of test for all subjects is also given. As a result, the column test is inferior on all counts; the increment test is superior in constancy of the individual associations and freedom from diurnal variations. It is also a more flexible test since the numbers to be added may be varied at will, and it is equally convenient for subtraction. It is inferior to the pair test in freedom from errors, for although the absolute number is less, it is greater in proportion to the number of associations.¹

TABLE II.

	Mean Variability of Ratios of 1st and 2d Half-times.			Diurnal Mean Variation in Amount of Work Done.					
	Column Test.	Pair Test.	Increment Test.	Column Test.		Pair Test.		Increment Test.	
				<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>
I.	.298	.118	.102	.99	1.43	4.6	4.6	4.2	2.4
II.	.980	.147	.106	.86	.51	3.3	2.4	1.5	2.0
III.	.251	.092	.092	.55	.65	1.4	3.3	1.8	1.7
IV.	.180	.075	.079	.60	.85	2.6	2.7	1.3	1.7
X.	.112	.141	.112	2.00	2.40	7.3	9.5	5.2	5.8
Av.	.188	.116	.098	1.00	1.17	3.8	4.5	2.8	2.7
Errors	31	16	13						

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DISCUSSION

PROFESSOR FITE ON THE EXAGGERATION OF THE SOCIAL

HEGEL and Spencer have added much to the thought of the time about the social consciousness, but the former's theory of the state and the latter's idea of the social organism have prob-

¹ These experiments were performed in the psychological laboratory of Columbia University. Standard blanks for the pair and increment tests have been prepared, and are included among the psychological blanks issued by the laboratory.

ably had less to do with it than their genetic point of view. A very little thought about the beginning and growth of the general form of reflective knowledge is apt to plunge one deep into the 'exaggeration of the social,' that is to say, into the hope of finding the story of the unfolding of mind unbroken when traced through the social life of man.

That there is a difference of a formal kind between earlier and later thought is presupposed, and indeed obvious, and we soon come in the study of the matter to a point where we see that this is not merely a difference in the number of things thought about and the number of recognized bonds between them. We soon see that it is a difference in the kind of knowledge we have of everything. It is a formal difference. Early awareness of things is, in the main, an *intentio prima animi*, while that which comes later is an *intentio secunda animi*. The former is 'acquaintance with,' the latter is 'knowledge about.' The former is immediate, comparatively transient, simply and straightway joined to the muscular movements which begin with it; the latter is more detached, farther away from visible action and things, more subtly and highly differentiated and organized. The former lacks objectivity and universality, the latter has these marks. The former is unreflective and comparatively unshaped by the give-and-take of gregarious life, the latter is marked by forms which are inseparable from the consciousness of a multi-polar self in which the individual is nobly one with his kind.

Perhaps this difference is characterized when we say that the early knowledge of children and the race is immediate, while that which comes later is reflective. How could the association of the individual human being with lower kinds, with plants and with inanimate things, ever lead to that consciousness of self which is the most important thing about reflective knowledge? It might lead to such language as the songs of birds or the bark and cry of wolves, but such language is too merely expressive of feeling to contribute much to the universality of knowledge. It might lead to ideas which, taken together, would constitute some associative kind of 'system,' but this could never be such ideas and such a system as science, philosophy and common sense make. It might lead to a vague consciousness of self, but not to the self-thought which functions everywhere and always in the life of reason. Suppose 'the relations between myself and natural objects are . . . precisely the same in kind as my relations to my neighbor,' does it follow that the exercise of merely instinctive and impulsive activities, including the imitation of plants, animals and things, would lead, in a non-human environment and within the life-span of a generation, to such

thoughts of self-in-relations as make up my consciousness of myself? Could such contacts with the world, and such knowledge as is derivable therefrom, ever result in that objectivity and universality which are the distinguishing marks of the world of reflection? Not in less time, we should say, than it has already taken the race to develop man's reflective powers and knowledge.

Professor Fite thinks that Robinson on his native island and innocent, from the beginning, of social intercourse 'would not have lacked the conditions for a mental development of the same kind, though of minor degree, as we now possess.'¹ But it would have been easier to understand this point if he had clearly defined and illustrated the words 'minor degree.' Our language, general ideas, processes of judgment, and self-consciousness all depend upon the imitative contact, repeated by each generation, of the individual with the built-up traditions of his time as these are embodied in language and the institutions of society. How, then, without this peculiar imitative intercourse, could Robinson ever come to the mental development we are familiar with? Truly, he would have to be a genius of inconceivable originality.

Professor Fite writes that 'in making use of the various natural objects—the *same* object at different times and for different purposes—he would be compelled to develop a language and a system of ideas.' Let us, however, while pointing out the 'sociologist's' and other fallacies, not fall into the 'psychologist's.' For the early thought of children and the race there is no 'same object' such as this statement implies, that is, such as would compel Robinson to develop a language and a system of general ideas. 'Same objects,' such as compel language and the systematization of ideas, exist only for reflective minds such as children must imitatively acquire through language, observation and a mastery of the social uses and meanings of things.

Of course, if you assume that Robinson all alone on his native island has the same social *milieu* as you and I, you beg the question. For this is tantamount to denying the presupposition upon which the question as to the origin and growth of reflection and reflective forms of knowledge rests. It is tantamount to saying that the power of reflection is congenital and native to the mind. You assume, with Kant and the rationalists, that the mind makes its world of reflective knowledge.

Hence, in our genetic psychology of human reason and knowledge, we should probably say more and more about the influence of social life upon thought and knowledge; while in our logic and

¹ See his 'Exaggeration of the Social,' this JOURNAL, Vol. IV., p. 393.

epistemology we ought to say nothing at all about it. All knowledge, in the logician's sense of the term, is social, reflective and general. The logic of the dog and the epistemology of the cuttlefish would be impossible without an entire change in the connotation of these terms. It is just possible that these questions of origin and growth will be treated in the logic and epistemology of the future, as they are treated in Baldwin's recent 'Thought and Things, or Genetic Logic'; but we can not face this possibility without seeing that in that case the logic and epistemology of the nineteenth and preceding centuries must remain for all time mere characteristics of those centuries. The logic and epistemology of the future will, in that case, become humanized and psychological to an extent never dreamed of by Mill and Hamilton.

I am glad to say that I find myself much more in accord with Professor Fite's definition of the 'sociologist's fallacy,' his second point, and yet am constrained to add that the term social has a more objective significance in sociology than in psychology and logic. All the cooperative activities of animal groups are for sociology social, whether or not they involve a consciousness of the distinction between the individual and others, while in psychology and logic only that knowledge can properly be called social which is reflective, that is, which rests upon and recognizes that distinction.

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SOCIETIES

THE SEVENTH ANNUAL MEETING OF THE WESTERN PHILOSOPHICAL ASSOCIATION

REPORT OF THE SECRETARY

THE Western Philosophical Association held its seventh annual meeting in Chicago, on March 29 and 30, in affiliation with the North Central Psychological Association. Both associations were the guests of the University of Chicago and were pleasantly housed in the dormitories. The meeting was perhaps the strongest ever held in the west by these associations. As many of those who took part in the program have failed to furnish abstracts, this report is not an adequate record of the proceedings. The reason for this is mainly that a large number of the papers had been accepted by various philosophical journals before the meeting. Of the following papers no abstracts have been received: 'The Ego and Empirical Psychology' (presidential address), by W. B. Pillsbury; 'Gar-

man as a Teacher,' by James H. Tufts; 'The Teaching of Psychology,' by James R. Angell; 'The New Mysticism,' by George A. Coe; 'A Bit of Physiological Religious Psychology,' by E. D. Starbuck; 'The Philosophical Interpretation of the Religious Consciousness,' by F. C. French; 'Pure Experience and Reality,' by E. B. McGilvary; 'Realism and Objectivity,' by B. H. Bode; 'The Relation of Pressure and Muscle Sense, also some Reflections upon the Efficacy of Consciousness,' by Thaddeus L. Bolton; 'The Place of Authority in the Moral Judgments of Common Sense,' by F. C. Sharp; 'The Theory of Democracy,' by Warner Fite; and 'Perception and Reflection,' by George Rebec. E. B. McGilvary's paper appeared in the *Philosophical Review* for May, 1907. The papers by James H. Tufts, B. H. Bode and J. E. Boodin appeared in this JOURNAL, in the May numbers; and W. V. D. Bingham's paper, on 'The Rôle of the Tympanic Mechanism in Audition,' in the *Psychological Review* for July.

The following constitute the executive committee of the Western Philosophical Association for the next year: F. C. Sharp, president; George Rebec, vice-president; John E. Boodin, secretary and treasurer; James R. Angell and Thaddeus L. Bolton, additional members of the committee. The following new members were elected: George A. Coe, Northwestern University; E. L. Norton, University of Illinois; E. D. Starbuck, University of Iowa; Daniel Starch and Rowland Haynes, University of Chicago; J. H. Coursault, University of Missouri; George McAlister, Missouri State Normal School; T. De Laguna and Irving King, University of Michigan; Mr. Wilm, Washburn College, Kansas; and Mr. Cowling, Baker University, Kansas. The next meeting will be held in Chicago, conjointly with the American Psychological Association. Abstracts of papers, so far as they have been furnished to the secretary, follow.

A Sketch of an Experimental Course in Esthetics: MAX MEYER.

The course, before analyzing the esthetic experience, tries to familiarize the student with this experience by presenting, in pairs, lantern slides of actual scenery, and asking the question, If you had no other way of whiling away your time but to inspect the one or the other of these pictures, which would you select? The material thus obtained is then analyzed by having the students themselves apply an artist's mode of thought in creative work. For this purpose the confessions of his mode of mental activity made by Hildebrand in his book 'The Problem of Form' are used by the class. Form and content are thus compared, Fechner's esthetic principles are studied and their relative value estimated, and such theories as those of the impressionistic school are critically discussed.

from the psychological point of view. The aim of the course is to let the student convince himself, on the basis of these observations, of the fact that the esthetic experience is a play with a percept, and to make him derive the objective and subjective conditions which favor a playful attitude towards a situation.

The Ultimate Attributes of Reality: JOHN E. BOODIN.

Taking reality at its face value as a stream of processes, it takes at least four dimensions or independent variables to define it: stuff or energy, which furnishes us with our various types of expectancy or uniformity, whether psychological or physical; time, which looked at objectively accounts for rearrangement or passing, looked at subjectively accounts for the instability of our judgments and values; space, which furnishes the possibility of free translation and distance; and direction, which furnishes the limit, epistemological and ontological, for the measure of the validity of our purposes.

The Permanence of Practise as a Measure of its Efficiency: WALTER F. DEARBORN.

The factors entering into the rate of progress in learning as studied in the familiar practise curves are more complex than has been generally recognized. Study of the records of twenty subjects shows individual differences in the number, duration or absence of 'plateaus,' varying influence of the sort of learning on the rate of acquisition, and differences in the permanence of parts of the same practise curve. Improvement secured in practise may not be due wholly to *bona fide* improvement, but to the substitution of one sort of learning for another sort, and the extent to which this may be considered real improvement will depend in part on the purpose in view. Finally, differences in the permanence of the transferred effects of practise call in question the theory of 'the identical elements present' proposed as an explanation of transference.

The Intensive Method of Experiment and Demonstration in Elementary Psychological Instruction: MABEL CLARE WILLIAMS.

According to the intensive method of experiment and demonstration, a few problems are studied in detail, in contrast with the extensive method, in which a large number of problems are briefly considered. The laboratory manuals of Titchener and Sanford may be regarded as representing respectively the two methods. A specific application of the intensive method to elementary instruction was outlined. Fifteen experiments, constituting the material for one semester, were selected, the necessary apparatus provided and an

explanatory chapter written for each experiment. This chapter is virtually a lecture and aims to set forth the setting of the experiment and the meaning of its results, to outline related problems, and to point out the practical significance of the experiment. The course is intended to overcome, in so far as possible, the difficulties arising in colleges and normal schools through lack of proper laboratory, library and instructional facilities.

The Ultimate Value of Experience: STEPHEN I. COLVIN.

Ultimate experience as such can not be known, since only objects can be known; yet such ultimate experience is an actuality. Of it as such nothing can be said, except to deny to it the characteristics of the objects of experience. There is, however, in every experience a group of objects that function in a sense for the ultimate experience (the subject of the objects experienced), and which may be taken as symbolic of the pure experience that does not reveal itself. One of the most important characteristics of this relatively subjective and immediate aspect of experience is that it seems to have an ultimate value and finality in itself. In modern times two philosophic creeds have arisen out of this immanent experience, the one utilitarianism and the other pragmatism. Both have in a sense assumed the validity of this immanent experience, the one in the doctrine of pleasure as the ultimate end of striving, the other in the assertion that satisfaction is the badge of truth; yet in the development of their philosophic beliefs both have departed at once from the immanent point of view, thus ignoring their origin. Further, these two systems have in their evaluation of goodness and truth ignored the goodness that is good in and for itself; and the truth that is self-contained and unconditioned. They have, in other words, disregarded the ultimate worth of that part of our experience that is relatively subjective and that ordinarily does not enter into the flux of a constantly changing world. The true point of view seems to be that there are elements in our experience that have what may be termed a final value in the moment of experience, that point back to no conditioning reality, nor forward to a growing system of facts. Here are found impulses and feelings that lie at the basis of our moral and intellectual judgments and give all experience its significance, not only because of that which is to follow, but also because of that which actually is. These impulses and feelings are necessary for our right living and true thinking. They give a final worth to action and an abiding value to truth. A utilitarian philosophy should evaluate them, and find a place for them in its world of contrasts and relations. This, however, it is singularly incapable of doing, since in attempting such an evaluation the very

being of these impulses vanishes. Thus there must always be an inadequacy in this philosophy. It can never give more than a partial view of the world because it ignores one of its most essential constituents. On the other hand, an intuitive ethics and an absolute logic, while not free from errors, both consider the immanent aspect of experience in which these impulses are found. Here a moral impulse and an intellectual thrill are given their worth. Rightly or wrongly, too, they are held to function for a pure experience outside of the objective flow of consciousness that contains absolute worth and abiding truth. Here is the psychological basis for a philosophy of permanent values and transcendent significance.

Supplementary Report on the Case of Miss W: J. B. MINER.

This case of vision acquired in adult life after the removal of complete congenital cataracts had been reported before (Monograph Supplements, *Psychological Review*, Vol. VI., pp. 103-118). Measurements of irradiation and length of spectrum supplemented the previous qualitative statements. For models in the irradiation test, the experimenter used a black and a white isosceles triangle, each having an altitude of 8 cm. and base of 5 cm. and placed on a complementary background. In reproducing the models, Miss W. judged the black triangle, on an average of 100 trials, to be 54 mm. higher than the white; M. V., 4 mm. The same test on an adult who was naïve as to the illusion resulted in her making the white higher by .2 mm.; M. V., .3 mm. An adult familiar with the illusion emphasized the white by 1 mm.; M. V., .2 mm. Fifty trials in another case of congenital cataract, removed after 36 years of age (Mr. E.), showed a reversal of irradiation similar to that of Miss W. The black was made higher by .9 mm.; M. V., .9 mm. Further trials on this individual were prevented by his leaving the city. An explanation of this curious reversal had already been published. Miss W.'s spectrum, as tested by her observation through a refraction grating, was 232 mm. long, compared with an average of 188 mm. for 45 other adults. A subject who had had senile cataracts removed saw a spectrum 211 mm. long. The errors do not affect these averages for spectra more than one or two millimeters. The extra length was added to the violet end of the spectrum, and it was suggested that the lens in the normal eye probably interferes with ultra violet vision. Miss W. sees violet rays with a frequency of about 9×10^{14} , which is 1.4×10^{14} greater than the frequency of the 'H' line. Observations of Mr. E. made on his first vision after the operation were briefly reported.

A Case of Good Audition after Destruction of the Tympanic Mechanism: W. V. D. BINGHAM.

In both ears drum membrane and larger ossicles are lacking, having been destroyed partly by long-continued middle-ear suppuration and partly by surgical operation. Nevertheless, patient is not 'hard of hearing,' but has nearly normal auditory acuity. Tests in other sense realms disclosed no general hypersensitivity. Loss of drum membranes does not interfere with generation of 'subjective' difference tones. More emphasis should be placed upon protective functions of the tympanum, and less upon sound-conducting functions, about which some otologists insist that little is definitely known.

Monaural Localization of Sound: DANIEL STARCH.

Experiments were made on three types of observers. (a) Artificial monaural conditions were produced in persons having normal hearing by closing the left ear. Discrimination was consequently found to be less accurate on the left side. Localization is not as accurate even on the right side as in binaural conditions. In the rear left quadrant consistent errors or reversals occurred. Sounds in front of the standard direction were localized back of it, and *vice versa*. In binaural hearing the former sound seems stronger, while here the latter seems stronger, and since the monaural conditions were produced artificially the observers interpreted the data in the habitual manner and consequently the reversals occurred. (b) The observer was partly defective in the left ear. His ability of localization is practically the same as that of the preceding observers, except that the reversal did not occur. (c) The observer was a strictly monaural person. Localization in the immediate vicinity of the aural axis on the side of the intact ear is as accurate as in normal hearing, but the accuracy decreases rapidly for directions farther away from this region.

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Secretary.

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REVIEWS AND ABSTRACTS OF LITERATURE

Entwicklung und Offenbarung. THEOD. SIMON. Berlin: Trowitzsch & Sohn. 1907. Pp. 129.

Die Moderne und die Prinzipien der Theologie. KARL BETH. Berlin: Trowitzsch & Sohn. 1907. Pp. 347.

These two books deal with the same subject-matter, namely, the relation between theology and modern thought. Both are written from the standpoint of a liberal conservatism, and each in its way is a witness to

the extent to which the methods of modern science have been making inroads into territory once regarded as consecrated to the *a priori* methods of the older orthodoxy.

Dr. Simon discusses a single problem, that of the relation of the conceptions of revelation and evolution. Dr. Beth raises the question of the relation of modern thought to the principles of theology in general. The similarity both in subject-matter and in method of treatment makes it convenient to treat them together.

Dr. Simon phrases the questions which his essay attempts to answer, as follows: "Whether it is consistent with revelation to regard it from the evolutionary point of view, and whether the idea of revelation itself does not require evolution" (p. 2). Both questions he answers in the affirmative, provided only the term 'evolution' be correctly defined. His essay, accordingly, falls into two sections, the first of which discusses the conception of evolution; the second, the application of the idea to revelation.

In the first section he criticizes the attempts, notably that of Haeckel, to banish the conception of teleology from evolution. He calls attention to the fact that the conception of evolution is by no means as simple a one as it is often supposed to be. As a matter of fact, there are at least two easily distinguished varieties, namely, the mechanical and naturalistic view of current scientific materialism, and the teleological conception of German idealistic philosophy. The first of these is, no doubt, antagonistic not only to revealed religion, but to religion in any form. The latter, however, is open to no such objection. On the contrary, it expresses a truth which theology should be foremost to recognize, namely, that God is not outside of his world, but in his world, the immanent ground of all that happens. It is the failure to perceive this which has made so many religious thinkers look with suspicion upon the notion of evolution as though it involved the sacrifice of the ideal values with which religion deals.

In the second part, Dr. Simon applies the principles thus gained to the concept of revelation. He shows that this conception, involving, as it does, the relation between the subject and the object, requires a development in the apprehension of the truth communicated, which can best be stated in evolutionary terms. This contention he illustrates in some detail in the case of the Biblical religion, and concludes by considering the objection that the recognition of evolution is inconsistent with the final authority of Christ. Dr. Simon does not regard the objection as valid. For, even granted that in Christ we have the revelation once for all of the divine ideal for man, it is still true that this ideal needs to be progressively apprehended, and in this progressive apprehension of the truth once for all given, we have a further sphere where the concept of development is applicable.

What Dr. Simon tries to do for a single question, Professor Beth undertakes all along the line. He begins by raising the question, Is the recent demand for a modern 'positive' theology justified? and answers it

unhesitatingly in the affirmative. By a positive theology he means a theology which 'regards the Christian revelation as an absolutely fixed point in the world of appearance' (p. 13). By a modern theology, on the other hand, he means one which feels itself in sympathy with the prevailing tendencies in the modern world, and endeavors to make them fruitful for its own scientific work.

Besides the introduction, the book consists of three parts, the first of which discusses the conception of the modern; the second considers the most prominent attempts which have recently been made in Germany to set forth a modern theology from the positive standpoint; and the third gives the author's own view of the principles which ought to govern such a theology.

Dr. Simon warns us against confusing the idea of the modern with that of the recent. When we speak of the modern world we describe a definite complex of ideals and principles which have gradually formed themselves during the last three or four centuries, and which constitute a permanent type of human thought which must be considered on its merits quite irrespective of its date. The leading characteristics of this world-view he finds to be, first, the high value which it ascribes to the individual, and secondly, its empirical character, or sense for the real. Both of these elements in the modern world are not only consistent with Christianity, but may be regarded as the recovery of elements in the primitive Christian world-view which have been obscured in the later development. With these good qualities, however, we find in the modern world other tendencies which are not so favorable; as, for example, a positivism which refuses to recognize any reality apart from phenomena, and which shows itself in the physical sciences in a naturalistic view of the world, and in the historical sciences in a relativity which makes no place for absolute values. What is needed is a theology which shall discriminate between the true and the false in the modern world-view, and, while using the help which the former provides, shall avoid the pitfalls which the latter opens.

After a long digression, in which he considers the historical origin of the modern world-view, Dr. Beth goes on in the second and third parts of his work to inquire as to its consequences for theological method. He first discusses with true German thoroughness the theological program which has recently been put forth in Germany by leading members of the Liberal Conservative party, notably by Theodor Kaftan, Rudolf Seeberg and R. H. Grutzmacher, and then develops his own position with reference to the questions which they raise. We have not the space here to follow Professor Beth's discussion in detail. It covers a wide range of territory, dealing successively with the relation of dogma and experience, the nature of religious authority and its bearing upon the ideas of revelation and the Bible, the difference between religious and theological knowledge, and Kant's contribution to the problem of their relation. Professor Beth concludes by indicating his view of the points of contact between theology and the natural sciences, on the one hand, and com-

parative religion, on the other. While he agrees with Ritschl and other members of his school in his recognition of the practical character of religious knowledge, he distinguishes sharply between religion and theology. Religion may speak the language of personal experience, but theology, like all sciences, must conform to the tests of objective truth. He has little sympathy with the antimetaphysical tendency so current in contemporary theology, and believes that the authority of Kant is wrongly invoked in its support. In particular, he criticizes the easy-going fashion in which many theologians abandon the world of nature to physical science as a realm indifferent to theology. Professor Beth believes that the theology of the future will concern itself more largely than it has recently done with the questions which the physical sciences raise, and he endeavors to point out in some detail what these questions are likely to be.

The student who desires an insight into the state of current theological thought in Germany will find Professor Beth's book instructive. One must, however, always bear in mind that the group of men whom the writer describes as representing the modern positive school constitutes a comparatively small party, and that they are opposed as well by the men of positive tendencies who find them too modern, as by the men of modern tendencies who find them too positive. The book is interesting, most of all, because of the light which it sheds upon the extent to which men who hold themselves firmly within the lines of the historic Christian tradition have been influenced by the currents of thought which have been transforming the method of other sciences.

WILLIAM ADAMS BROWN.

UNION THEOLOGICAL SEMINARY.

A Symposium on the Subconscious, with prefatory note by the editor. Contributors: PROFESSORS MÜNSTERBERG, RIBOT, JASTROW, JANET and DR. PRINCE. *The Journal of Abnormal Psychology*, April-May, June-July, 1907. Pp. 22-43 and 58-80.

Believers in the subconscious who come to feast at this symposium will certainly not depart from the banquet table in a state of undue hilarity. For in the confessions of faith of the five contributors only one comes out fully and freely in favor of the doctrine, while, of the others, two are avowedly averse to it, one is somewhat ambiguous though probably to be reckoned on the side of the opponents, and one struggles valiantly against the necessity of committing himself. The results of chief interest brought out by the symposium are two in number: we see where some of our leading thinkers stand in this matter, together with the reasons for their positions, and we have the issues of the subject now sharply and comprehensively stated. It is significant also to note that it is at last specifically acknowledged that the subconscious is a product of interpretation rather than an object of observation. As Professor Münsterberg puts it, "Even if we welcome the observed facts in their widest limits, there can be no doubt that the subconscious itself is never among

them," the fact being that 'the subconscious agencies are superadded elaborations.' With varying degrees of explicitness this position is taken by all but one of the contributors. The significance of this admission lies partly in the fact that it efficiently does away with the charge, often brought by the physician against the psychologist, that he is dealing with matters with which he has no first-hand acquaintance. But now it is clear that if the subconscious be a product of interpretation, a 'super-added elaboration,' the psychologist has full rights in the field, provided only that he can trust the facts reported by the physician.

As to the sharpening of the issue, one of the most noteworthy features about the symposium is that the problem of the subconscious is reduced to its lowest terms. The mystic, wonder-working, 'subliminal' view is disavowed by all of the writers, sometimes quite summarily. And, furthermore, the 'storehouse' or 'reservoir' notion of the subconscious, which makes of this a repository of forgotten experiences and cast-off ideas and sensations, is seen to have its status involved in that of a simpler issue. Reduced, then, to its lowest terms, the basal question of the whole matter is simply and solely this: Do certain observed phenomena, notably the automatic behaviors of hysterics and other abnormal subjects, require us to postulate a dissociated consciousness for their explanation, or are they to be understood as manifestations of a disordered cerebral mechanism which now functions without concomitant psychical states? Here, then, is the fundamental alternative: Is the interpretation to be psychological or physiological?

Let us glance at the different papers in turn. Professor Münsterberg argues that since no observed fact can by itself point to the kind of explanation that it needs, this explanation must be determined on epistemological grounds quite outside of the region of observation. Moreover, the decision between possible modes of interpretation is to be made on the basis of highest utility. And, furthermore, the interpretation chosen must be that 'which brings the abnormal facts in closest relation to the normal processes and covers both by the same formulæ.' The present issue is characterized as that between the physicians and the psychologists, and if compelled to choose, Professor Münsterberg avers his inclination towards the psychologists' view that 'the subconscious is not psychical at all,' but that 'brain processes without subconscious psychical forerunners furnish all that we need in the abnormal cases for the same kind of understanding which science has for [normal] seeing and hearing.' Upon epistemological grounds, with which readers of his 'Psychologie' are familiar, the uselessness of conceiving psychical facts outside of consciousness is pointed out, as well as the fact that it is as impossible to have such psychical facts outside of consciousness as to have physical facts outside of nature. The language of psychology may still, however, be employed, 'for clearness' and convenience' sake,' in the description of so-called subconscious phenomena.

Professor Ribot makes the convenient distinction between the *static*

and *dynamic* aspect of the subconscious, indicates how the latter has called the greater attention to itself, and shows that in trying to solve the question of the ultimate nature of subconscious activity one 'comes back to this inexorable dilemma—psychologic or physiologic?' Professor Ribot puts himself on record as 'coming more and more to the side of the physiologic hypothesis,' for the principal reason that 'the psychologic solution rests upon an equivocal use of the word conscious.' "Underlying the psychologic theory," he says, "in all its forms, there is the tacit hypothesis that the conscious is assimilable to a quantity which may decrease indefinitely without ever reaching zero. It is a postulate which nothing justifies."

Professor Jastrow presents a condensed summary of the views recently expressed in his volume on 'The Subconscious.' I am not sure that I can do justice to Professor Jastrow's position, for I am not altogether certain that I have an accurate understanding of it. His highly figurative style is so rarely abandoned for terse and straightforward sentences that the reader soon develops a feeling of insecurity in his orientation similar to that felt when wandering about in an environment of massive mirrors. So far as I can discover, Professor Jastrow never makes any crisp formulation of the fundamental issue, and it is for this reason, perhaps, that Dr. Prince seems to regard him as espousing some form of the psychological theory to which he himself gives adherence. After rereading certain passages in the volume referred to and comparing them with the statements of the present paper, I have convinced myself, however, that Professor Jastrow is to be reckoned with those who favor the *physiological* interpretation of the subconscious. In any case, it is entirely clear that the 'subliminal' is vehemently repudiated, and that any helpful interpretation is, in his opinion, to be sought solely through the medium of the admittedly normal. With this latter conviction as a guide, the state of normal absent-mindedness furnishes 'a peculiarly instructive example of what is meant by the subconscious in working trim.' In dealing, however, with those abnormal manifestations that suggest dissociated groupings of functions, it is extremely difficult to be certain of Professor Jastrow's meaning. Are these dissociations and groupings, in his view, psychical or cerebral? If the interpretation is to be guided by what happens in normal absent-mindedness, it would seem that we must reply cerebral. But we are not distinctly told. Perhaps I can do best by quoting a pair of sentences. "In fine, the added complication of these admittedly perplexing embodiments of dissociated functioning [as in the cases of Mlle. Smith, Miss Beauchamp and Mr. Hanna] does not constitute a warrant for a distinctive hypothesis, but suggests a warranted extension of the conception of dissociation as applied to more common and regular phenomena. That the conception of dissociation must be shaped to include these is obvious; and the chief importance of further data lies in the hope that they may render more precise and explicit the connotation of that uniquely significant term in modern psychology." Just how much this admits, or declines to admit, I am unable to determine.

Professor Janet's paper is a most remarkable document. In its theoretical portion it is evasive, non-committal on the vital issues and, it seems to me, inconsistent with itself. But the paper's most surprising quality comes from the distinct disavowal of the 'fine theories' in accordance with which other writers have employed the word subconscious 'in a sense infinitely more ambitious' than that which he has meant to give it from the time of his earlier publications. This being so, it must from the very start have been somewhat of a shock to Professor Janet to witness the startling use made of his modest term. For we are now explicitly told—what those who have talked personally with Professor Janet have probably known for some time—that the term subconscious is for him no philosophical explanation, but a word which sums up the 'common-place clinical phenomena' of hysteria. "The word subconscious is the name given to the particular form which disease of the personality takes in hysteria. . . . It is a simple clinical observation [!] of a common character which these phenomena [automatic writing, etc.] present." This seems calculated to take the wind from the sails of those who have thought they were basing their belief in the subconscious on the descriptions and discussions contained in the author's '*L'automatisme psychologique*' and subsequent writings. For if the word 'subconscious' is meant to apply to phenomena, to sum up clinical observations, it is thereby shorn of all interpretational value and becomes a mere fashion of speaking. If we take Professor Janet's present words at their face value, we must believe that his employment of the term subconscious is a mere descriptive device involving in no way the intention to give a theoretical interpretation of the facts.

In exoneration of those who have erroneously believed Professor Janet to argue in support of a meaning which he now disavows, it must be said that the writings themselves are to be held responsible. For when a writer gives currency to a term which carries theoretical implications which he does not intend to give it, the situation should be made so clear that neither technical nor untechnical readers could fall into error.

The descriptive portions of the paper, referring to certain experiences of psychasthenics and hysterics, are admirable summaries of fact and are very illuminating.

The evasions and inconsistencies mentioned above occur mainly in the course of replying to eight questions submitted by the director of the symposium. The most glaring inconsistency appears in the fact that, after having construed the word subconscious in the manner cited above, it is stated in another connection that this word seems to apply 'to the conscious states which are in coactivity at any moment.' This takes one over to a manifestly interpretational view, and we are forced to conclude either that Professor Janet is occupying a self-contradictory position or that his meaning of conscious is quite at variance with the usage of a technical psychology.

Dr. Prince closes the symposium with a paper which very clearly sets

forth his own belief in a coactive subconsciousness. This is the only paper of the series which is unambiguously favorable to the doctrine under discussion. It is for the most part very lucidly written, and the reader is left in no doubt respecting either the position taken or the line of thinking employed. The argument turns chiefly on two points, the demands of *continuity* and the inadequacy of the position that makes *awareness* the test of existing consciousness.

1. The first argument is by no means novel. It is applied here to automatic writing, for the reason that this presents features that are neat and precise. The reader is reminded of the continuity of gradations from the automatic writer who is fully alert though only subsequently aware of what his hand has written, through the writer who is drowsy and only imperfectly oriented to his surroundings, to the one whose normal consciousness has departed, an alternating consciousness being now seemingly in the ascendancy. In such a series "we pass through insensible gradations from one condition to the other and *we must infer that the intelligence must be the same in kind, physiological or psychological, which produced the writing in the one case as in the other.* If the alternating intelligence in the latter case is psychological, the subconscious intelligence [or, better, whatever it is that seems to be manifesting intelligent action] in the former must be the same, for there is no place where we can stop and conclude—here the physiological ends and the psychological begins."

Now, I must confess, this argument from continuity seems to me to carry very little weight. For it apparently proceeds upon the supposition that whenever in a series of transitions we are unable to mark the precise point where a new manifestation is supposed to occur, we must assume that such new manifestation has not occurred at all. But we are certainly not forced to any such variety of thinking. Within the shell of the new-laid egg there is no chicken to be found. There is one within the same shell when the egg has been maturely incubated. Who, now, can indicate the instant at which the chick appeared? And yet very few of us would maintain that the inability to meet this challenge drives us to infer that the chick was there from the very start.

This argument from continuity is so weighty in the minds of some, and it is so desirable that its true status be exploited, that it may not be amiss to choose an illustration more in line with the phenomena under discussion. Consider, for example, the various stages manifested in reading, whether silently or aloud. Sometimes one reads with full conscious intent, as when trying to pronounce correctly a foreign language. Sometimes one reads with diminished attention in a half sleepy fashion. And sometimes one wakes from a fit of abstraction to find that the foot of a page has been reached without the faintest inkling of what has been read. Is one, now, to conclude that the reading went on consciously—other-consciously, of course—in the last case, merely because it is the end term of a series and because one can not say just where in the series consciousness stops and a purely mechanical process begins? Some, indeed,

may conclude thus, but it happens that Dr. Prince does not (see p. 70), and in any case we are not helped thereby to understand the phenomenon.

2. The second emphatic point of the paper is this: The stumbling-block in the way of accepting the psychological interpretation of automatic writing and similar phenomena is, Dr. Prince thinks, the inability to understand 'how we can have states of consciousness of which we are unaware.' Passing over the unfairness of the charge that psychologists are wont to confuse *consciousness* and *self-consciousness*, let us note the writer's view as stated in his own words and then see the logical situation in which this places him. Referring to the extremes of type seen in automatic writing, Dr. Prince says: "As I view this question of the subconscious, far too much weight is given to the point of awareness or not-awareness of our conscious processes. As a matter of fact, we find entirely identical phenomena, that is, identical in every respect but one—that of awareness—in which sometimes we are aware of these conscious phenomena and sometimes not; but the one essential and fundamental quality in them is automaticity or independence of the personal consciousness. Doubling and independence of the personal consciousness are, therefore, the test of the subconscious rather than awareness." And again: "The one fundamental principle and criterion of the subconscious is dissociation and coactivity (automatism)."

But it is 'doubling' (or 'dissociation') of *what* that is to be made the test? If doubling of consciousness, then the whole question is begged at the very outset, for that is the point at issue. If doubling of the brain syntheses, then the whole question returns upon us once more, since we have to interpret the automatism arising from the dissociated synthesis as requiring or not requiring the supposition of a concomitant consciousness. An automatism, as Dr. Prince acknowledges elsewhere in the paper, can not prescribe its own explanation, and this is only another way of saying that it can not form the test for the mode of interpretation which it requires. Surely, then, this second point is based upon sorry logic, unless I have quite misunderstood the meaning of the sentences quoted.

The paper closes with an attempted reconciliation, on panpsychic grounds, between opponents and advocates. The point is made that if we admit a 'double aspect' view, we may use either set of terms, physiological or psychological, which suits our passing purpose. I question, however, whether the opponents of the subconscious would care thus to be reconciled.

If the honors of this symposium were to be assigned, the present writer, though, perhaps, disqualified from the right to pass judgment through being himself a partisan, would assign them unhesitatingly to those who prefer the physiological interpretation. For the one paper that unqualifiedly supports the psychological side seems to lack the logical force which compels assent. But whether one be persuaded or not of the soundness of either view, the symposium has done excellent service in bringing about a better understanding both of issues and of attitudes.

JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. May, 1907. *La perception du temps* (pp. 449-491): B. BOURDON. - Duration is a felt qualitative characteristic which may accompany any psychological phenomenon. When it has persisted too long it loses its unity, and associations of memory and perceptions come in. Duration and position in time are primitive and irreducible as color, extent or number. *La spatialité des faits psychiques* (pp. 492-501): G.-L. DUPRAT. - Bergson's remarkable attempt to preserve a spiritualistic conception of an inextended 'I' leads to difficulties which are avoided if we recognize that all our sensations are primarily extensive. A higher synthesis shows us that any analytically obtained 'I' which we suppose inextended is really united to all its spatial representations and is therefore extended. *Sur une forme d'illusion affective* (pp. 502-517): TH. RIBOT. - This is a study of strictly subjective illusions, such as imagining that one can not get along without a friend who is going away and who really is soon, for practical purposes, out of mind, or such as hunger and thirst when they are effects of a disturbed digestion. These illusions are often part of our dispositions and have many causes: weak judgment, difficulty of establishing judgments without direct comparison, suggestion, an imperfect knowledge of our affective phenomena. Some, though illusions, are rather to be called useful than harmful; for example, those adding to self-esteem and self-confidence. *Observations et documents* (pp. 518-529): *Notes de psychologie religieuse—Les conversions*: J. ROGUES DE FURSAC. - *Analyses et comptes rendus* (pp. 530-554): Bechterew, *L'activité psychique et la vie*: PH. CHASLIN. Cassirer, *Das Erkenntnisproblem in der Philosophie und Wissenschaft*: C. BOS. M. Hébert, *Le divin: Expériences et hypothèses*: OSSIP-LOURIÉ. Hubert, *Etude sommaire de la représentation du temps dans la religion et la magie*: JULES SAGERET. J. Moses, *Pathological aspects of religion*: L. ARRÉAT. Pellat, *L'éducation aidée par la graphologie*: A. L. P. Barth, *Die Elemente der Erziehungs- und Unterrichtslehre*: L. POITEVIN. Radulescu-Motru, *Psihologia martorului*: G. ASLAN. W. Kinkel, *Geschichte der Philosophie als Einleitung in das System der Philosophie*: C. HURT. B. Croce, *Ciò che è vivo e ciò che è morto della filosofia di Hegel*: J. SEGOND. W. Ebstein, *A Schopenhauer: seine wirklichen und Vermeintlichen Krankheiten*: L. ARRÉAT. *Revue de périodique étrangers*.

Davidson, William L. *The Stoic Creed*. Edinburgh: T. & T. Clark.

Imported by Charles Scribner's Sons. 1907. Pp. xxiii + 274. \$1.75.

Nunn, T. Percy. *The Aim and Achievements of Scientific Method*. An epistemological essay. London: Macmillan & Co. 1907. Pp. x + 144.

Proceedings of the Aristotelian Society. The volume comprises the following papers, read before the Society during the twenty-eighth session, 1906-1907: 'Nicholas de Ultricuria, a Medieval Hume,' by Hastings Rashdall; 'On the Nature of Truth,' by the Hon. Bertrand Russell;

'On Causal Explanation,' by T. Percy Nunn; 'Logic and Identity in Difference,' by Miss E. E. Constance Jones; 'Humism and Humanism,' by F. C. S. Schiller; 'Fact, Idea, and Emotion,' by Shadworth H. Hodgson; 'Intuition,' by A. T. Shearman; 'Philosophy and Education,' by Benjamin Dumville.

Pringle-Pattison, A. Seth. *The Philosophical Radicals and Other Essays, with Chapters Reprinted on the Philosophy of Religion in Kant and Hegel*. Edinburgh and London: William Blackwood & Sons. 1907. 6s.

Shaw, Charles Gray. *Christianity and Modern Culture: An Essay in the Philosophy of Religion*. Cincinnati: Jennings & Graham; New York: Eaton & Mains. 1907. Pp. 310. \$1.25.

NOTES AND NEWS

THE following extracts are from the address of Mr. D. G. Hogarth, president of the section for anthropology, before the British Association: "As a student of Mediterranean races and a frequent observer of their actual representatives, I have often been struck by the persistent dominance of femininity in their conception of the divine, and equally by the distinction which that fact makes between their instinctive creeds and those of other races domiciled contiguous to them, but round an outer radius. In fact, it would not be difficult to draw a broad frontier line at a certain distance inland round the Mediterranean area from the Atlantic to the African deserts, within which a goddess has always reigned supreme in the hearts of the unsophisticated folk, with a god occupying only a subordinate, and often demonstrably a less primeval, throne; while without it the god has been dominant and the feminine divinity secondary. Within the frontier lie the peninsular and other littoral districts with a broad *hinterland* of mountainous or hilly regions. With the great continental plains begins the outer and contrasted circle. The predominance of a great nature goddess among all the races of the East Mediterranean basin in the earliest historic time is well known; and to what had been ascertained of her among the Semites, under her many names, Tanith, Al-Lat, Baalit, Ishtar, Atta, Ashtaroth—these last but variants of one appellation; among the Nilotic peoples also under many names, *e. g.*, Neith and Isis; among the Anatolian races as the Great Mother, Kybele, Ma, and the unknown 'Hittite' title; among the historic inhabitants of Greece and the Ægean as Rhea, Artemis, Britomartis, and a score of other appellations; among the Italic tribes as Diana or local variants, there has been added latterly the discovery that a goddess of character and attributes readily to be compared with those of the nature deity in various parts of the surrounding area was dominant in the religion of that important artistic race which occupied the Ægean in the prehistoric age, and had so much influence on the momentous civilization of its later time—that race which has been rescued from long

oblivion by Schliemann in Greece and Troy, and by Evans and others in the Isles. The more we learn of this great nature or mother goddess, the more primeval and predominant is the position she is seen to hold. All round the Eastern Mediterranean she was before all created things: she became the mother of a son by spontaneous generation or some other process independent of the male—an idea, it may be remarked, which presents no impossibility to the minds of very primitive races, some of whom even at this day do not connect fertilization and conception as cause and effect. With her son she produced all life: she gave her son to the humanity so created, and humanity killed him that it might live; he revived and returned again to his mother, was again killed, and so the cycle of the seasons revolved. So far as concerns him in all his *avatars* Mr. Frazer's book may be consulted. As for her, a woman still holds the same place in the religious belief of the old races of the same region, wherever they have escaped assimilation by conquering races and faiths from beyond the border. Hear any Greek or Italian peasant in a moment of excitement or danger. He calls on no Person of the Trinity, but on the Virgin. For him her power does not come from her motherhood of her Son. Indeed, I have known Christian countrymen of a West Anatolian valley to whom that motherhood was evidently unknown, and when spoken of remained without interest or significance. She is a self-sufficient, independent embodiment of divinity, to whom the ruder folk of Mediterranean lands offer their prayers and pay their vows alone. She and no other is beseeched to grant increase and fertility; she and no other is credited with the highest direction of human affairs. But to say, as so often is said, that, for instance, in Greek lands the Panaghiá is simply a survival of Artemis or Aphrodite under another name, is to convey a false impression. She stands for the same principle of divinity as they; she has taken on, as I shall point out presently, even the feasts and the ritual of her predecessor; and she has often made peculiarly her own the spots especially sacred to the earlier mother-goddess. But, as I take it, she is not worshiped now in Ephesus or Cyprus merely because there was once a dominant cult of Artemis or Aphrodite in those places, but because to the peoples of a wide Mediterranean region it is still, as it always was, a religious necessity to embody their idea of divinity in the feminine; and I would state the relation of the Christian Virgin-Goddess to the pagan one rather in this way—that, coming from without, she gained acceptance at once for herself, and probably also, in a great measure, gained acceptance for the whole creed with which she was connected, because she offered a possible personification of the same principle which had always been dominant in the local religion. . . . The particularism, which communities—village, tribal, urban, and even national—display all the world over, has had, of course, much to do with local persistence of sanctity. A small body, blessed with a private deity of its very own for uncounted centuries, who has been identified with its particular interests, and has favored it in its multifarious local feuds, will not readily resign it for a deity of more general jurisdiction.

If it accepts the Christian Virgin in place of a pagan goddess, she will be the Virgin of that particular community, unconnected with any other Virgin, and in full sympathy with the insults which Latin peasants, for example, will heap upon the Madonna of the rival village across the valley. Indeed, an indistinctive distrust of and disinclination to accept an impartial god is characteristic of all imperfect humanity, and lies beneath the sectarianism which has been promptly and continuously developed within the pale of all the great universal religions—for instance, in both Islam and Christianity. The omnipresent, omniscient Deity is too far removed, too catholic, too vague. Man ever desires to focus divine attention on a smaller area, to establish for himself some preference in the eyes of his God; and, even when most anxious to bring the rest of the world into the fold, he often most jealously reserves to his own community the distinction of a chosen people."

On the 23d of July a memorial service was held at Heidelberg in honor of Kuno Fischer. The address was by Professor Windelband, and from it we take the following information and comment: Fischer began as professor at Heidelberg in 1873, and his last official lecture was in 1903. He was the best exemplification in Germany of the *professeur orateur*, such as Victor Cousin. The early days of his professorial career fell at a time when philosophy seemed in Germany at a low ebb, and his work on Kant (1860) had the greatest influence in stimulating the neo-Kantianism so popular in Germany. Fischer's first published work bore the title 'Diotima' and was a study of the idea of the beautiful. It appeared in 1849. His only theoretical work was entitled 'Logik und Metaphysik' (1865), in which the author sought to make the concept of development the most fundamental idea. At the age of almost eighty years he completed his 'History of Modern Philosophy' with the volume on Hegel, and his last energies were given to putting in final shape his work on Faust. He was twice married, the first time to a French woman, the second time to a Danish woman, both of whom he outlived. He was born on the 23d of July, 1824, and died, at Heidelberg, on July 4, 1907.

MR. MARTIN WHITE, who has for some years endowed the teaching of sociology in the University of London, has now founded two professorships in that subject, one permanently and the other for a period of five years. The appointment to the permanent chair has not yet been made; the other has been offered to and accepted by Dr. E. A. Westermarck, who has already held a lectureship in the subject at the university. Dr. A. C. Haddon has also been appointed university lecturer in ethnology for the session 1907-8 under the Martin White benefaction.

ACCORDING to statistics published in *Science* for August 30, the doctorate in psychology was conferred upon ten candidates in 1907 by American universities. The highest number for one year was twenty-one, in 1905. Other years were as follows: 1898, eighteen; 1899, fifteen; 1900, nine; 1901, thirteen; 1902, eight; 1903, eighteen; 1904, ten; 1906, twelve.

THE meeting of the British Association for the Advancement of Science, to be held next year at Dublin, will open on September 2, under the presidency of Mr. Francis Darwin.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE NEW REALISM

THERE has been a great deal of confusion in regard to terms in recent discussion. It may be well, therefore, to define what we mean by realism at the very outset. A number of writers have called themselves realists and proposed to champion realism, when they are really indistinguishable from idealists. Here, at least, the Leibnizian law of indiscernibles ought to hold. If the terms realism and idealism are retained at all, they ought to stand for different concepts. It is hard to see how theories which strive to express reality in terms of perspicuous or translucent perceptual differences can be called realism. This would surely make the shade of Berkeley wince a bit. Either empirical idealism or positivism is a better term for recent tendencies than realism. Leaving out all reference to the metaphysical stuff for the time being, I would hold that realism means the existence of reals beyond the apperceptive unity of individual consciousness and that these reals can make a difference to that consciousness so as to be known. Idealism, on the other hand, used in the epistemological sense, would have to hold that there is strictly only one unity of consciousness and that therefore the relation to reality is a perspicuous relation. This assumption on the part of idealism may be veiled under various terms, such as appearance and reality, the finite and the infinite, the incomplete purpose and the completely fulfilled purpose; but in the various forms of expression the assumption remains that all the facts are ultimately and really strung on one unity of thought.

In order to pave the way for the statement of my own realism I must first expose two fundamental fallacies which permeate most of our past philosophic thought. The first of these fallacies may be stated as the assumption that only like can act upon like, or that cause and effect must be identical. This has been assumed as an axiom by metaphysical idealism and materialism alike. For idealism and materialism are alike indiscriminative. Their method is dogmatic rather than critical. The only difference is in the stuff with which they start. Idealism, starting with meaning stuff, tries to ex-

press the whole universe in terms of this. Materialism, starting with mechanical stuff—stuff indifferent to meaning and value—must be consistent, or as consistent as it can, in expressing the universe in terms of this. Both buy simplicity at the expense of the facts.

In the end the problem is the old one of Empedocles: Can only like make a difference to like? “For it is with earth that we see Earth, and Water with water, by air we see bright Air, by fire destroying Fire. By love do we see Love, and Hate by grievous hate.” Expressed in terms of modern idealism, from the side of individual consciousness, the problem would read: Can only experience make a difference to experience; can only thought make a difference to thought? The absolute idealist attempts this disjunction: The reality which we strive to know must either be part of one context with our own finite meaning, it must be included within the completed purpose, the absolute experience, of which we are even now conscious, as well as of our finitude and fragmentariness; or, on the other hand, the real object must be independent of our thought reference. But complete independence is meaningless; therefore there must be one inclusive experience. To think an object as real is to think it as experience; therefore it must be experience.

The issue between the realist and the idealist is a twofold one. The realist insists that there can be different universes of experience which can make a difference to each other; and also that what is non-reflective or non-meaning can make a difference to our reflective purposes, or *vice versa*. When we reflect upon a stone, that makes the stone experience for us, but does it also make the stone *as such* experience? It is as reasonable, at any rate, to say that only water can know water, and that therefore in order to know water we must have water in the eye or on the brain, as it is to say that in order to know the stone or to reflect upon the stone, the stone must be reflective. In either case our attitude is merely dogmatic.

Science has already abandoned the axiom that only like can act upon like. It is busy remaking its mechanical models in order to meet the complexity of its world. The atomic theory is hardly more than a picture language for chemistry. Chemical energy need not be the same as electrical or nervous to make a difference to either. Chemical energy implies weight and mass, while electrical or nervous energy does not. The old metaphysical difficulty in regard to conscious and physical energy has given way to a question of fact. The question is not, *Can* they make a difference to each other? but, *Is* there evidence of their making any difference to each other? A cup of coffee or a good beefsteak makes a difference to thinking. But that does not necessarily make them thought stuff. Whether cause

and effect are identical, either in kind or in time, is something for empirical investigation to determine, and not to be settled *a priori*. Science presents strong evidence that they need be neither.

It is time that philosophy, too, were abandoning dogmatism in favor of facts. It is no longer a question of materialism or idealism; but we must use idealistic tools where we are dealing with idealistic stuff and mechanical categories where the evidence for consciousness and value is lacking. We must learn to respect ends where there are ends; and to use those facts as means which have no meaning of their own. To fail thus to discriminate is to be a sentimentalist, on the one hand, or a bore, on the other. What we want is a grain of sanity, even the size of a mustard seed.

The merit of idealism, and for this we ought to give it due credit, is that it has shown that the universe must be differentiated with reference to our purposive attitudes. This is true whether the reality to be known is purposive or not. But because the universe can only be known through our purposive attitudes, that does not make the universe through and through purposive. Where idealism has been strong has been in interpreting institutional life. In order adequately to know another meaning, we must copy or share that meaning. This is true whenever our reality is thought stuff. Idealism, on the other hand, has always been weak in dealing with nature, and in furnishing therefore the proper setting for natural science. Idealism has striven to institutionalize nature or to reduce nature to reflective experience. In order to do this, it has been forced either to insist upon the ideality or phenomenality of nature, with Berkeley and Green, or to take the ground of Hegel, John Caird, and Royce that nature is essentially thought, social experience, the objectification of logical categories, though *an sich* and not *für sich*, whatever that may mean. Hence nature becomes capable of system; it is essentially systematic. Thus in apotheosizing the unity of apperception into an objective unity of nature, idealism has failed to discriminate. The stone and Hamlet are lumped together. But we can not acknowledge or react on nature as reflective or as experience on its own account, and therefore idealism breaks down. It is true that we make the *system* of nature, as social minds, to anticipate the future and to satisfy our needs. But the inwardness of the energy which satisfies and the nature of the transformations by which it satisfies, we can not know. Water satisfies thirst. That is an energetic relation. But how and why we do not know. Hence our knowledge of nature is phenomenal. Not communion, but control, is what we must aim at. Knowledge is good here when it works. Dewey's account of the relation of

knowledge to reality in terms of end and means, or purposive control, dodges the real issue of realism. It is merely a psychological account.

Materialism, on the other hand, has been quite right in applying the mechanical categories to part of reality. The mechanical ideals will always find favor in natural science, where the aim is not the understanding of an objective meaning, but control of nature for our purposes. Where the materialist shows his dogmatism is in applying categories which are convenient in dealing with the non-purposive structure of the world to institutional reality as well. In failing to make them work here, instead of calling into play new categories, he insists upon eliminating the refractory world of meaning and value. The idealist, on the other hand, with his eye primarily on the world of social tissue or ideals, has insisted that the real is essentially the social or communicable. Each has failed to recognize how the other half lives.

We have spoken of one fallacy, namely, the assumption that part of reality, in order to make a difference to another part, must be of the same stuff. The other fallacy of which I wish to speak is the assumption that what is not stuff can not be real. This assumption is very old. It is assumed by Parmenides when he dismisses non-being as unthinkable and nonsense. It is assumed by Kant, in his antinomy of space and time, when he assumes that the relation to nothing is no relation. Most philosophers have followed the leadership of these distinguished thinkers. But the assumption that zero is unthinkable and that the relation to nothing is no relation has been abandoned by mathematics for logical reasons. It must be abandoned likewise by metaphysics. I have tried to show elsewhere that time, space and direction must be assumed as non-stuff dimensions of reality in order to realize our human purposes; and I shall not try to repeat the arguments here.¹

Instead of the dogmatic method, pursued by the old idealism and materialism alike, we must substitute the critical method. This method has been rechristened within recent years by C. S. Peirce and William James and called pragmatism. As I understand this method, and have endeavored to apply it, it means simply trying to carry the scientific spirit into metaphysics. It means the willingness to acknowledge reality for what it is; what it is always meaning

¹ For the treatment of the non-stuff dimensions of reality, see especially the author's monographs, 'Time and Reality,' No. 26, *Psychological Review Series*; 'Space and Reality,' this JOURNAL, Vol. III., pp. 533, 589; 'The Ultimate Attributes of Reality,' *ibid.*, Vol. IV., p. 281; and 'Ought and Reality,' *International Journal of Ethics*, July, 1907.

for us, what difference it makes to our reflective purposes. Instead of insisting upon identity of stuff, as dogmatism has always done, this method is discriminative. It enables us to break up the universe and to deal with it piecemeal, to recognize unity where there is unity and chaos where there is chaos, purpose where there is purpose and the absence of purpose where there is no evidence of purpose. The universe in each part or stage of development is what we must acknowledge it to be, not necessarily what we *do* acknowledge, but what we *must* acknowledge to live life successfully. This acknowledgment, moreover, is not a mere will to believe or volitional fiat, but, at least as knowledge becomes organized, a definite and conscious acknowledgment. An unlimited will to believe as regards objective reality would be possible, if at all, only before we have organized knowledge, that is, if you could imagine knowledge starting in a conscious will-act. When we already have organized knowledge, if we choose to know, the possibilities become limited. In case of fully organized knowledge the place of the will to believe would be the will not to think, that is, to commit intellectual suicide.

Neither can we state the truth attitude in merely dynamic terms. If we believe Dewey, the truth attitude must be characterized primarily by doubt and a transition to a new equilibrium, and must cease with certainty. This seems to me a one-sided definition. The truth attitude *may* at least involve the consciousness that we know that we know. To be sure, the nervousness of science leads us to repeat the experiment, in order to make sure that we have made no mistake; but that does not alter the truth of our first finding, if the experiment proves correct. If Dewey were right, truth would cease with its attainment. Truth is getting truth, but when you have truth, you have it no longer. That seems paradoxical. Truth as we have it, it seems to me, involves two things,—first, luminousness, or a peculiar satisfaction to the individual experience at the time, due to its felt consistency or fluency. This is the real positive truth value, whether formal or factual. The other factor involved in scientific truth is the feeling of tentativeness or openness to correction. This is a qualification or nervousness on the part of the truth attitude either as a result of an actual feeling of discrepancy and fragmentariness as regards our present meaning; or it may be due to a more general feeling of instability based upon the time character of our meanings. Such correction can only come through further experience, whether of the immediate or formal type. We can not say that the *value* consists in the future consequences or leadings. These obviously have no value until they come. Further experience furnishes the possibility of correction of our truth values and so of

producing new values. I say *possibility* of correction because repeating the experiment, while it relieves our nervousness, does not necessarily produce a new truth. The truth value itself must be stated in creative terms, and not merely in terms of consequences. If the truth value lay merely in the consequences or leadings there could be no such thing as truth value.

Having now made clear our method, we are ready to define our realism. We may lay it down, then, that the real must be known through our purposive attitudes or conceptual construction. Real objects are never constituted by mere sense perception. They are not compounds of sensation. They presuppose creative purpose. They can only become objects for a self-realizing will. The real is the intelligible or noumenal, not the mere immediate. It is through hypothesis that knowledge becomes possible. The immediate can only be evidence, a secondary grade of reality at most, though, in the language of Professor James, it does put us next to the real object; or, in my own terms, it is one form of energetic continuity.

I realize that this thesis runs counter to the prevailing attitude at the present time, which is an apotheosis of the immediate. But empirical idealism is at best a half-way house. We can not say that the real is merely what is perceived or what *makes* an immediate difference to our conscious purposes, whether in the way of value or of fact. We must at least say that the real is what *can* be perceived, unless we bring in some *deus ex machina* or supernatural storehouse of percepts, as Berkeley does. Surely the empirical idealist of to-day would not say that the increased powers of the telescope or microscope create the facts. Nor can the *uniformity* of our expectancies be credited to our individual perception; and hence, from the perceptualist point of view, requires another *deus ex machina*. To say that uniformity or stability is a social fact does not explain the fact, but presupposes an extrasocial constitution, a constitution binding upon all of us. Not only perception, but *possible* perception, must be invoked to complete the empirical idealist's reality; and '*possible*' itself is not a category of perception.

As the old idealist and the old realist alike assumed the principle of causal identity, it became necessary to think of the subjective qualities as copies of objective qualities. Naïve realism and idealism alike assume the identity of the perceptual qualities and the real qualities. In modified realism, the primary qualities at least must be copied. For the empirical idealism of to-day the problem still remains as to whether the perceived qualities and the objective qualities are the same. Unless the idealist becomes a solipsist he

must show that his subjective copies are adequate even to a perceptual world. This difficulty would vanish, once we abandoned the principle of identity, which is merely *a priori* and contrary to the evidence of science. To ask what perceptual qualities are, when they are not perceived, becomes in that case as superfluous as it is meaningless. Processes which are not conscious and which therefore have no perceptual qualities can, under certain conditions, make perceptual differences to beings organized as we are. To speak of archetypal qualities is merely duplicating this moment of perception. If these non-conscious reals act upon other non-conscious reals, we have not perceptual differences, but chemical or physical changes. These must be interpolated by us in order to make continuous our perceptual scheme. We saw the wood burning in the grate: in our absence the fire has gone out and the wood has turned to ashes. To piece together this discontinuity in our perceptions we must assume certain differences or changes which can not themselves be expressed as perceptions.

But a more serious difficulty still remains. Even granting a being who should have perceptual differences for all the changes going on, minute or great, and without breach of continuity, even he would not have reality. The real individual can not be treated as a compound of perceptual qualities or subjective values. He must be acknowledged as something more than the sum total of his appearances, past, present and future. If sensations constituted reality, then the more sensations the more reality. Take Helen Keller's reality, for example, on this supposition. For convenience, I will use Professor Titchener's estimate of the number of sense qualities. According to him, sight furnishes us 32,820 different sense qualities, hearing 11,600, making a total of 44,420. The remaining sense qualities are in the neighborhood of fifteen. As Helen Keller possesses neither the sense of sight nor that of hearing, her reality would be to our reality as 15 is to 44,435, leaving the question of value out of account. But Helen Keller seems to be able to enter into communion with human beings all over the world, to share their purposes, to sympathize with them and help them better than most human beings with the use of all their senses. The reason the phenomenalist position, that reality is the sum of its perceptions, has seemed so plausible is that it has always borrowed its illustrations from the physical part of the world, where the inwardness of the process is inaccessible to our ideal construction. As we can not know the inner reality of gold, it became easy to suppose that gold is the sum total of its perceptual qualities, as yellow, malleable, soluble in *aqua regia*, while these are merely the functions of gold, or

ways in which it can be connected up with a certain context including our psychophysical organism. When we come to deal with a human being, a friend of ours, the inadequacy of mere perceptual qualities becomes evident. He is not his height, nor his color, nor his softness, nor his hardness, nor even the sum total of all the perceptions we can get. He is what we must acknowledge, what fulfills a unique purpose on the part of our wills, and, as opposed to the gold or the stone, a sharable reality, a reality whose inwardness we can to some extent copy.

The confusion of the perceptual and the noumenal goes back to Leibniz. It was Leibniz that confused force and representation, the resistance and doing-work character of the thing with its perceptual stuff; or, in the case of a higher grade of reality, the abstract concept with the purposive will. Kant is quite right that Leibniz's perception stuff is merely phenomenal. Leibniz misses the very 'soul' in things, which he wishes to find.

We have seen that the real is the intelligible or the noumenal; that this reality is accessible only through conceptual construction or purposive will attitudes. The reals must be ejects, not percepts. No wonder that the perceptualists have not been able to discover non-being dimensions, since these could not be perceived, but discovered only through the most subtle conceptual tools, according to the real difference which they make to our purposive striving. We have already indicated that because reality can only be known conceptually, that does not mean that reality must be conceptual. Reality is, however, only *really* knowable in so far as it is conceptual, that is, so far as we can share its inner meaning. Were reality through and through a moral whole, a city of God, knowledge could be at least approximate, that is, so far as different meanings can grasp each other. Identity is important for the real sharing of meanings or real knowledge, even if it has no relevance to causality. In recognizing that reality could not be treated altogether as moral purpose, Kant showed a keenness far exceeding that of his critics, as he showed his obtuseness in not recognizing that moral purpose, as expressed in individual and institutional life, is a real part of reality.

The conceptual noumenon need not seem a cold abstraction. On the contrary, it may, on account of instinctive beliefs, come to us with immediate certainty and conviction. It may present itself, as in the case of our fellow man, as an object of immediate acknowledgment; and, in the case of religion, it may feel like an immediate presence, as instinctive feeling takes the place of inference. But in any case the reals beyond our own consciousness must be ejects, not

percepts, however immediate their reality as a result of instinct may seem. They are objects of thought or purposive will, not of sense. The perceptual qualities have no reality except as relations to conscious energetic centers or purposive wills. It is quite true, therefore, that perceptual qualities can not interact, as they are the felt continuities or the functional connections of energetic centers, when a conscious will is part of the complex. There can be no sense in speaking of these qualities as acting upon the will or parallel to the world of will-acts. They are simply one type of transeunt connections or energetic continuities. These energetic continuities may be intersubjective relations, and in that case communication and real knowledge are possible. They may be relations of centers below the reflective level. In that case knowledge becomes instrumental or phenomenal.

Equipped with our subjective purposes, or conceptual tools, we can now confront the larger world. In the course of conscious experience, and as we strive to realize our tendencies, formal or practical, the world beyond us becomes differentiated and labeled according to our success or failure. But the real objects are not constituted by our differentiation, except when we make our realities outright, as in the case of artistic creation. The meaning is, indeed, created in the course of experience, but not the object which we mean. Else science were impossible. The real objects must be acknowledged or met, whether they are to be understood or to be controlled.

The noumenal world, which constitutes the world of real objects, may be differentiated according to our purposes into two general divisions, the world of being or stuff, on the one hand, and the world of non-being or non-stuff, on the other. By the former I understand, speaking in phenomenal terms, various types of expectancy or uniformity, which we can have in regard to our perceptual world. These types of uniformity, again, can be graded into two main divisions, namely, those which we can acknowledge metaphysically as purposive in their own right and those which we must acknowledge as existing and must meet, but whose inwardness escapes us. The former we must learn to understand and appreciate, the latter to anticipate and control. The former constitute the realm of idealism, the latter of materialism.

Whether our conceptual structures should be regarded as copies or as tools with reference to the larger world is not a question that can be settled after the manner of *either or*, but must depend upon the kind of reality we mean. If this reality is that of other purposive structures or meanings, then the relation must be that of

copying or sharing; if the reality aimed at is infra-reflective, then the relation must be instrumental.

As regards the stuff character of reality, then, our theory is pluralistic, acknowledging different kinds and grades of energetic centers according to the differences they make to our reflective purposes.

But this theory also insists upon non-stuff dimensions of reality. These, too, are noumena, or intelligible realities. They differ from the stuff types in that they are not perceptually continuous with our psychophysical organism. They can not appear as phenomena, but must be acknowledged for the realization of our purposes. Thus we must acknowledge the transformation of our values, the instability of our meanings. Time creeps into our equations and makes revision necessary. New values can only be had by waiting. Again, space conditions our intersubjective relations, as well as our relations to non-purposive beings. It makes possible externality of energetic centers and free mobility. Lastly, the relativity of our meanings and ideals makes necessary the assumption of an absolute direction, a normative limit, to measure the validity of our finite standards. These non-being dimensions must be regarded as real as the will centers which they condition. They are more knowable than the world of stuff, because their characters are few and simple, whereas the varieties and grades of stuff are almost infinite. Thus, by means of our conceptual tools, we are able to discover, not only various kinds of stuff, but we are able to discover dimensions of reality of ultimate importance, where microscopes and telescopes can not penetrate, realities which eye hath not seen nor ear heard, nor ever will see or hear, more subtle than ether or radium, if these be more than fictions.

If you laugh now at the title of this paper and say that I have palmed off a very old realism with new pretensions, I have no apologies to offer. For, on the one hand, there is nothing a philosopher needs more than a good laugh; and I shall feel that, in any case, I am a public benefactor. On the other hand, it is not the philosopher's business to make a world, but to interpret it; and men's oldest instincts are often truer than their newest theories. These instincts I have tried to make explicit.

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A BROADER BASIS FOR PSYCHOLOGY NECESSARY

PSYCHOLOGY developed before any of the objective sciences; hence it was inevitable that it should be the 'science of consciousness,' entirely distinct from any of the objective sciences. The wonderful development of the natural sciences in the last half

century has resulted in profound changes of method in psychology and some changes in psychological classifications, but the earlier view of psychology as a science that seeks to classify and explain conscious phenomena only, has persisted and still dominates all psychological thought. The work of physiologists has been extensively used in explaining conscious phenomena and has caused new analyses and classifications of the facts of consciousness, but the psychologist has still considered that he was dealing with an entirely distinct order of facts, hence he has not rendered much assistance to the physiologist by analyses of mental activity. He has generally insisted upon the use of separate terms for psychological and physiological facts, although great confusion frequently results from trying to describe processes exclusively in one, or more fully in both sets of terms, especially when there is often no means of knowing whether the process described is or is not conscious. A few terms, however, such as behavior, function, etc., that do not imply either presence or absence of consciousness, have come into use because of their great convenience in discussing organic phenomena.

With the progress of psychology into the genetic field the difficulties of studying behavior or function from the subjective or conscious side have been greatly multiplied, until psychologists generally recognize that the terms and definitions based on the introspections of highly developed states of consciousness are totally unsuited to describe the mental states of animals, children, and the lower races.

The invention of a number of new terms will only multiply difficulties and errors unless a common conception is found for all forms and grades of behavior of organisms and organs. The terms seed, plant, blossom, fruit, in botany, have only a formal value for purposes of classification until they are conceived as different forms or stages of what is essentially the same. In a similar way psychology and other sciences can get no relief from the rapidly increasing difficulties of naming and explaining the great variety of phenomena now being studied until a common conception is found for the facts of physiology, biology, psychology, and I may also add sociology. The addition of 'subconsciousness' to our vocabulary where separate consciousness of any kind is implied, emphasizes the old point of view, solves no difficulties, and multiplies the chances of error.

A helpful common conception is, I believe, to be found by regarding physiology, biology, and psychology as all being concerned in the study of the behavior or the functioning of organisms and organs, whether conscious or unconscious. In other words, our ideas of a functional psychology must be developed and broadened to include unconscious functioning.

All organisms, though subject to physical and chemical laws, are distinguished from non-living bodies by the exhibition of what we know as life phenomena, which we may think of as the new phenomena that appear with the organization of matter, just as new phenomena appear when two chemical substances unite. When organization and functioning reach a certain degree (whether it be supposed to be in the simplest form, the ameba, or the highest, man), then another new phenomenon, that of consciousness, appears. This conception places before us a distinct field of scientific research in which the problem to be investigated is the behavior of organisms. In this broad field a number of sciences are now concerned, each seeking to understand the behavior of organisms by studying their anatomy, or structure, and their physiology, or modes of functioning.

Psychology is concerned with one portion of this larger field. Its more specific task is to determine what kind of organization and functioning is accompanied by consciousness, to classify the various phenomena of consciousness, and to determine the interrelationships between structure, functioning, and consciousness.

So far as intellectual activities are concerned, conscious phenomena are easily brought under the same standards as the unconscious. The end of the functioning of all organisms is the preservation and perpetuation of the organism, and all behavior adapted to secure that end may (if we think of intelligence as the adaptation of means to ends) be regarded as intelligent, whether or not it is conscious. To use the word in this sense involves a considerable change in the meaning of the term, not so much because the idea is different as because the term 'intelligence' has usually carried with it the implication of consciousness. It is, however, absolutely necessary to modify the meaning of the word so as to include unconscious as well as conscious adaptation of means to ends, or to find some other word to describe this fundamental characteristic of all organs and organisms. The general terms 'neurosis' and 'psychosis' have been found very useful, but we need a more general term to include the essentials of both these terms. I therefore suggest the term 'organosis' to signify the adaptive functioning of any organism or organ without reference to whether the activity involved is conscious or unconscious, and without reference to whether the organ is nervous or non-nervous, or the organism vegetable or animal.

Such a general term and conception are necessary because certain fundamental characteristics of the behavior of all living organisms, from the plant and the ameba to man, are the same (nervous tissue having them only in a greater degree), because there are no means of knowing whether some of these are conscious or not, and because

there is good reason to believe that an organ may at one time function with consciousness and at another time without. We need therefore to recognize a science of behavior of organisms and organs, or organosis.

Many corresponding general terms, such as a term to indicate the retention of the effects of previous experience, whether conscious or unconscious, will also be needed to express the broadest meaning that may be attached to memory, and another term to mean perception, whether conscious or unconscious. In sociology we shall conceive of society as functioning and surviving by means of its material appliances, its language, customs, laws, and institutions, while the psychologist will no longer regard man as a separate existence, but as a portion of a larger organism upon which the development of individual mental life is peculiarly dependent.

It will, of course, also be necessary, after getting this common point of view, to classify under general heads the different forms of the same general phenomena. Thus, under the term organosis (or intelligence in a broad meaning), we shall have (1) vegetative or physiological organosis or intelligence, which carries on the life processes within the organism, (2) sensory-motor organosis, or intelligence manifested in the functioning of reflex and instinctive mechanisms that promote survival in a given environment, (3) representative organosis, or intelligence which is manifested in the functioning of organs by which past and possible future stimulations are reacted to as well as present stimulations, (4) abstract or thinking organosis, or intelligence manifested in the functioning of organs (presumably the frontal lobes of the human cerebrum) by which the possibilities of various modes of reaction are symbolized and realized without their taking place.

The several forms of organosis or intelligence differ not so much in degree as in the kind of mechanism and functioning by which means are adapted to the great end of preserving life. The building and keeping alive of a tree or the body of a man is not less wonderful than the planning of a building by an architect, and the regulation of the heat of the different rooms by means of a furnace, engineer and thermostat is very simple compared with the functioning by means of which the physiological apparatus regulates the heat of the body under various conditions. The analyses performed by the stomach are more complex than the formulæ of the chemist. Furthermore, the physiological organosis may be modified by repeated and even by single stimuli, as well as conscious functioning. Again, the sensory-motor intelligence of the bee in building its comb, of the swallow in catching insects, and of the baseball pitcher in

throwing the ball, is different, but not less in degree, than are the mathematical calculations by which the engineer constructs a bridge or determines the course of projectiles.

The experimental psychologist has been greatly handicapped in his tests, especially those directed towards the measurement of general intelligence, by the fact that psychological analysis has not pointed out these different forms of intelligence that are the result of the functioning of different organs in different ways.

The study of functioning, organosis or intelligence from the conscious side only is much like trying to understand the movements of an engine, an electric car, or a printing press by watching the operator. The human mechanism is a million-fold more complex than any of these machines, and the details and success of its functioning are known and controlled by consciousness to as slight an extent as are the detailed mechanisms and working of a great railroad system by its president, and yet there is no more reason to doubt that consciousness influences behavior than there is to doubt the influence of the railroad president.

When the genetic point of view is more fully worked out psychology will be transformed not so much by having its accepted facts invalidated as by having them illuminated, explained, and placed in their proper perspective in relation to other sciences and to the theory of evolution that has so rapidly transformed all of scientific thought.

The above is a *very* brief statement of the point of view reached by the writer in his study of genetic psychology, presented, while some of the details are being worked out, for the criticism of psychologists.

Suggestions are desired, not only as to the point of view, but as to terms. Is it best to extend the meaning of old terms and recognize unconscious as well as conscious intelligence, memory, perception, etc., or is it best to invent new terms that shall imply neither consciousness nor unconsciousness while the facts of behavior are being studied?

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DISCUSSION

THE ABSOLUTE AND THE STRENUOUS LIFE

MR. W. A. BROWN, in the JOURNAL for August 15, approves my pragmatism for allowing that a belief in the absolute may give holidays to the spirit, but takes me to task for the narrow-

ness of this concession, and shows by striking examples how great a power the same belief may have in letting loose the strenuous life.

I have no criticism whatever to make upon his excellent article, but let me explain why 'moral holidays' were the only gift of the absolute which I picked out for emphasis. I was primarily concerned in my lectures with contrasting the belief that the world is still in process of making with the belief that there is an 'eternal' edition of it ready-made and complete. The former, or 'pluralistic' belief, was the one that my pragmatism favored. Both beliefs confirm our strenuous moods. Pluralism actually demands them, since it makes the world's salvation depend upon the energizing of its several parts, among which we are. Monism permits them, for however furious they may be, we can always justify ourselves in advance for indulging them by the thought that they *will have been* expressions of the absolute's perfect life. By escaping from your finite perceptions to the conception of the eternal whole, you can hallow any tendency whatever. Though the absolute *dictates* nothing, it will *sanction* anything and everything after the fact, for whatever is once there will have to be regarded as an integral member of the universe's perfection. Quietism and frenzy thus alike receive the absolute's permit to exist. Those of us who are naturally inert may abide in our resigned passivity; those whose energy is excessive may grow more reckless still. History shows how easily both quietists and fanatics have drawn inspiration from the absolutistic scheme. It suits sick souls and strenuous ones equally well.

One can not say thus of pluralism. Its world is always vulnerable, for some part may go astray; and having no 'eternal' edition of it to draw comfort from, its partisans must always feel to some degree insecure. If, as pluralists, we grant ourselves moral holidays, they can only be provisional breathing-spells, intended to refresh us for the morrow's fight. This forms one permanent inferiority of pluralism from the pragmatic point of view. It has no saving message for incurably sick souls. Absolutism, among its other messages, has that message, and is the only scheme that has it necessarily. That constitutes its chief superiority and is the source of its religious power. That is why, desiring to do it full justice, I valued its aptitude for moral-holiday giving so highly. Its claims in that way are unique, whereas its affinities with strenuousness are less emphatic than those of the pluralistic scheme.

In my last lecture I candidly allowed for this inferiority of pluralism. It lacks the wide indifference that absolutism shows. It is bound to disappoint many sick souls whom absolutism can console. It seems therefore poor tactics for absolutists to make little

of this advantage. The needs of sick souls are surely the most urgent; and believers in the absolute should rather hold it to be a great merit in their philosophy that it can meet them so well.

The pragmatism or pluralism which I defend has to fall back on a certain ultimate hardihood, a certain willingness to live without assurances or guarantees. To minds thus willing to live on possibilities that are not certainties, quietistic religion, sure of salvation *any how*, has a slight flavor of fatty degeneration about it which has caused it to be looked askance on, even in the church. Which side is right here, who can say? Within religion, emotion is apt to be tyrannical; but philosophy must favor the emotion that allies itself best with the whole body and drift of all the truths in sight. I conceive this to be the more strenuous type of emotion; but I have to admit that its inability to let loose quietistic raptures is a serious deficiency in the pluralistic philosophy which I profess.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Theory of Good and Evil. A Treatise on Moral Philosophy. HASTINGS RASHDALL. Oxford: The Clarendon Press. 1907. 2 Vols. Pp. xx + 312; xv + 464.

The purpose of Dr. Rashdall's 'Theory of Good and Evil' is primarily to provide for the use of undergraduate students of philosophy a systematic discussion, which shall be as free as possible from perplexing 'allusiveness and technicality,' of the chief topics connected with the ethical problem. The author's own theory embodies a frank attempt to present 'a fresh systematic treatment of the main problems of moral philosophy' in the spirit which animated Professors Green and Sidgwick, and a reconstruction of ethical theory which shall profit not only by the criticisms of each of those thinkers upon the other, but also by the 'general progress of philosophy' since the first appearance of their ethical works.

This treatise, though concerned with the investigation of profound questions, is singularly successful in its avoidance of all ponderosity and pedantry. Written in a pleasing style, it is readable throughout. The problems discussed are clearly presented, the line of argument is always developed with logical care and dialectical skill, the discussions of even the most abstract questions are uniformly lucid and illuminating. Much of the suggestive power of the work is derived from the wealth of pertinent illustration, upon his abundant store of which the author draws freely. Particularly noteworthy is the careful analysis of problems under investigation and the comprehensive marshaling of opposing and conflicting views. Of the merits and demerits of inharmonious views there is

always fair consideration and frank acknowledgment. There is much evidence of the author's desire for an impartial investigation and the intent to seek truth rather than confirmation of a predetermined thesis. The discussion of various difficult and perplexing aspects of the ethical question is not alone illuminating, but is adapted as well to stimulate further reflection. There is clear and explicit recognition and indication of the broad social incidence of many principles, and no less of particular instances, of conduct, which will certainly induce an intellectual and moral expansion in the reader whose thought is still in process of organization. The work in general is extremely well suited to the needs of undergraduate students either as a text-book or as a work of collateral reference. Worthy of specific mention also is the author's just appreciation of the essential character of the moral consciousness and his ready admission of its implicates—an admission, however, which is carefully guarded against misinterpretation, and to which advance is made only through critical examination of opposite views.

The subject of investigation is so divided and the subtopics are so arranged as to be discussed under three general heads: Book I., entitled 'The Moral Criterion,' seeks 'a clearer and more definite conception of the moral criterion than is contained in (the) common moral consciousness.' Book II., entitled 'The Individual and the Society,' considers the controversies which 'center round the question of the relation of the individual and the individual's good to society and a wider social good.' Book III., discussing 'Man and the Universe,' takes up 'those wider philosophical issues which are ultimately involved in any attempt to think out fully and adequately the meaning of the word's "right and wrong," "good and evil."'

The author, recognizing that 'a clear and adequate conception of the scope and object-matter of a Science' is the goal rather than the starting-point of a specific science, disclaims in his introductory chapter the attempt to delimit the subject of ethical investigation in advance, except for the assumption 'that we are concerned with the study of human conduct, that we are investigating the meaning of the ideas "right" and "wrong," with the object of arriving at a clearer conception of those ideas in general and of determining in a more precise way than is done by ordinary persons in common life what things in particular are right and what are wrong.' This last clause contains a hint of the author's method in treating the various abstract problems considered. Throughout there is constantly in evidence an endeavor to bring the discussion of each specific problem into a close and vital connection with actual contemporary life, with activities and situations familiar to the twentieth-century man. In following out the investigation the treatment takes what the author regards as 'the line of development taken by the mind of students.'

The author having assumed in the earlier chapters of Book I. 'that Kant is right . . . in holding that moral approval is a judgment of the intellect, not a feeling or an emotion,' undertakes to justify this position in his discussion of 'Reason and Feeling.' His position, as he admits,

embodies a considerable qualification of the ethical rationalism of Clarke, Kant and kindred thinkers. He holds that though moral judgments are given by reason, neither mere rationality nor a purely 'rational desire' is adequate as the sole reason for specific actions. 'Normally the ends prescribed by the practical reason are objects of desire for their own sake.' Even though 'the judgments of practical reason normally create a more or less powerful impulse towards the performance of what they enjoin . . . it is possible to distinguish between the judgment that the act is right and the emotions by which the judgment is accompanied.' This important distinction is repeatedly emphasized by the author and grounds his view that the distinctively moral factor is a rational process of value assessment. He finds that an emotion may inspire particular judgments of right and wrong, but it could not create the idea of 'right' or of 'good.' For 'it is not the existence of the feeling but our judgment that that feeling is good that enables us to say that the act which excites it is right or wrong.' He holds and apparently justifies his views that the judgment of value is an immediate judgment of the practical reason, not a mere feeling; that the essence of the judgment—the idea of value—is a distinct intellectual concept or category; that the moral judgment possesses a universality or objectivity which can not be ascribed to mere sensations or to the judgments of perception founded upon them. The author recognizes a true element in hedonism inasmuch as 'feeling is . . . always part of the ground on which an ethical judgment is based,' but he emphatically declares it fallacious to attempt to evaluate feeling abstracted from other elements of consciousness, as ultimate judgments of value are pronounced upon consciousness taken as a whole.

The determination of the respective spheres of reason and feeling within the moral consciousness prepares for the presentation of Dr. Rashdall's own theory of the moral criterion, which he designates as 'ideal utilitarianism.' The selection of this name he justifies as follows: "The term utilitarianism will . . . suggest that we do estimate actions by their tendency to promote human good . . . while the qualification 'ideal' will remind us that the good for which we seek is not a conception got by abstraction from a number of empirically given experiences of pleasure or pain, but an ideal set up by rational judgments of value passed upon all the elements of our actual experience." As further elucidating this justification of the use of the term it should be noted that the intent of earlier chapters has been 'to show that the way to find out whether an action is right or wrong . . . is to consider whether it will tend to produce for society in general a Wellbeing or *εὐδαιμονία*, or good which includes many elements possessing different values, which values are intuitively discerned and compared . . . by the moral or practical reason.' Though all moral judgments are intellectual, they are further held to be 'ultimately judgments as to the value of ends.' Thus would the author combine the 'utilitarian principle that ethics must be teleological with a non-hedonistic view of the ethical end.' 'All virtue' he asserts consists 'ultimately in the promotion of true social good.' Examining virtue, he

discerns a 'general principle of the superiority of certain parts of our nature to others' which is "the root of two sets of virtues: of those virtues which consist in the exercise of the higher intellectual and esthetic faculties; of the virtues which consist in the due control or subordination of the lower impulses."

Although it is clearly man's duty 'to produce the greatest possible good,' the question 'Whose good is to be promoted?' must still be answered. This question leads to an admirably clear and precise discussion of justice. Bentham's dictum is so modified as to read: "Everybody's good to be treated as of equal value with the like good of every one else." That equality which is based in absolute justice is said to be 'equality of consideration.'

The second book commences with a defense of the possibility of a hedonistic calculus; the hedonistic conception of the ethical ends is, however, rejected. The author finds that pleasure is *a* good, but not *the* good. The moral consciousness pronounces some goods intrinsically more valuable than others—the highest of all being 'virtue.' Between different kinds of good, choice should always be of the higher. The possibility of such choice is said to imply the commensurability of all values on a single scale. Happiness as well as pleasure is sharply distinguished from ethical value as such. Happiness should not be identified with 'the end of life in general, with consciousness that has value, with well-being.' Though a most important element in well-being, happiness, by itself, is not *the* good.

The conception of the moral end as well-being finds further clarification and expansion in the discussion of 'self-realization and self-sacrifice.' The author's attempt to define his attitude towards these opposite views of the ethical end, constitutes what is, perhaps, the least satisfactory portion of the work. Though the views advanced are for the most part tenable, it seems palpable that, logically followed, they lead to conclusions acceptable to the average advocate of self-realization as the ethical end.

Several 'possible' interpretations of the 'fascinating formula'—'self-realization is the end of life'—are presented and criticized. Taken literally, the formula is meaningless as the self is real already. If it means 'the realization of some potentiality or capacity of the self which is at present unrealized,' the author will admit that 'morality must consist in some kind of self-realization.' But as all activity, immoral as well as moral, is self-realization, the 'differentia of morality' is lacking in the formula. It can not mean the realization of *all* the capacities of human nature, for 'one capacity can only be realized by the non-realization or sacrifice of some other capacity.' Nor can it mean 'an equal all-round development of one's whole nature—physical, intellectual, emotional.' Such an aim is as impracticable as the realization of all one's capacities. 'One possible interpretation . . . remains. Self-realization may mean the realization of a man's highest capacities by the sacrifice of the lower. . . . But . . . there is nothing of all this in the word "self-realization." And even with the gloss that "self-realization" means realization of the

"true" or "higher" self, it tells us just nothing at all about the question what this true self-realization is.' A serious difficulty is found in the fact that 'self-realization' says 'nothing about the question of the relation of my end to that of others.' This would be removed, we are told, if we contend that 'the self which is realized in morality actually includes in itself all the other selves in whom I feel an interest'; but in objection to such a view it is urged that 'the very essence of selfhood . . . excludes an absorption or inclusion in other selves.'

Dr. Rashdall rejects the self as the ethical end. His own treatment of the moral goal as social well-being would, however, seem to involve the admission that ultimately all good is evaluated with reference to a plurality of selves in society. He frequently makes explicit statements which would ground such a view. "Even the moral law," he tells us, "is not an end in itself, but only souls or wills recognizing and regulating their action by the moral law." And again: "The very idea of an 'end' implies the existence of beings (who may find) some kind of satisfaction in that end." Elsewhere he asserts that feelings of moral approval 'are elements in a single . . . articulated ideal of human life.' After stating that 'benevolence asserts the value of good, justice . . . the value of persons,' he adds: "There is no real and final collision between these aspects of the ideal end, for good is ultimately the good of definite individuals." He also declares that while 'the perfection of human society demands the interaction of many different types of human excellence . . . we may, nevertheless, speak of a single ideal of human character.'

These utterances would seem to supply adequate basis for the conclusion that there is an ideal of human nature, the realization of which is the moral goal; that its realization is the good, but that this good is itself always relative to the self which in and through morality is realizing the ideal in itself. If in such view of the ideal there be no explicit mention of other selves, it nevertheless seems fair to urge that every self is a social self, an individual, but always in relation to his fellows. Thus the ideal becomes what Professor Geo. H. Palmer calls the 'conjunct self'—the self in its inevitable social relations—a view to which Dr. Rashdall's conception of social well-being seems reducible. For he admits that 'good is ultimately the good of definite individuals.' The conception of the ethical end as a person avoids, if we hold to an ultimate ideal of human character or selfhood, the vagueness which seems inseparable from Dr. Rashdall's conception of 'social well-being.' Well-being which comprises a balance between self-development and self-assertion, and self-sacrifice as well, acquires definite meaning only in reference to selves or persons who in themselves are of final significance. Morality is for persons, rather than persons for morality.

Vocation which determines the 'kind and the limits of the self-development and self-sacrifice which (morality) will demand of the individual' is the subject of a discussion which is of especial value because of its practical adaptability to the solution of one of life's most insistent and most perplexing problems. After noting that social interest requires dif-

ferent contributions from different members, and that, therefore, specialization in moral activity is necessary, the author discusses carefully and with helpful suggestiveness specific considerations which should determine the choice of vocation.

The third book discusses first 'metaphysic and morality.' These are closely connected because a true account of morality involves metaphysical postulates; some of the conclusions of metaphysic are of importance for morality; and moral philosophy supplies *data* to metaphysic. Ethics is found to deal with 'such a large and fundamental aspect of ultimate reality that it is practically impossible to deal with it thoroughly without taking a very important step towards the determination of our attitude towards reality as a whole.' Chief emphasis is laid upon the reality of a continuous self and the existence of a divine conscious-will which grounds an absolute moral law. The baffling problem of evil is also investigated. The author admits a certain justification for the pessimist's emphasis of evil in the world. But he goes on to declare: "It is only the evidence of the moral consciousness, taken in connection with the idealistic or theistic argument as a whole, that forces us to believe that the world must have an end, that that end is good, and that that good is in principle the same good of which in the moral judgments of the developed moral nature we have a . . . not fundamentally misleading revelation. On this supposition whatever evil exists in the world must be supposed to exist because it is a necessary means to the greatest good that the nature of things makes possible." In explication of this limitation of divine omnipotence God is distinguished from the philosophical absolute.

In discussing free will, conversion is held to be not inconsistent with determinism as 'character must always include undeveloped possibilities,' and the change may be merely of outward behavior. Nor can freedom mean 'unmotivated willing.' The motive indispensable to volition can, however, not be identified with some purely external factor, nor even with an object of desire as it would be apart from the individual's reaction upon it. The precise question at issue is: 'What is it that makes one desired object appeal more strongly to one man than . . . to another?' In answering this question the libertarian need not deny permanence or continuity of character. Only a small portion of conduct need be referable to undetermined choice to establish freedom. Freedom in the sense of 'power of self-determination,' though not involving 'the existence of undetermined beginnings' in man's volitional life, is 'an absolutely essential postulate of morality.'

The treatise closes with an investigation of the possibility and limitations of casuistry. For the author holds that moral philosophy, though mainly a speculative science, should supply practical guidance. By dealing with classes of cases rather than specific instances, casuistry may assist the solution of many moral questions about which there is no consensus.

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Immanuel Kant: Darstellung und Würdigung. OSWALD KÜLPE. Leipzig: Teubner. 1907. Pp. viii + 152.

The purpose of the series of popular handbooks in which this volume appears leads Professor Külpe to offer an account of Kant that is even briefer and more simplified than Paulsen's. In view of the author's evident desire to appeal to the general cultivated reader, the book is rather one-sided and ill-proportioned. Neither the relative interest of Kant's ethics, nor its place in his system, is so small as to justify giving it only ten pages, where over eighty are devoted to the minutiae—often wholly superfluous and absurd minutiae—of the *K. d. r. V.* Nor does the treatment of the ethics err only by excess of brevity. It is limited to the *K. d. p. V.*; Külpe seems to have quite forgotten that ethically much more interesting work, the 'Grundlegung zur Metaphysik der Sitten.' As a result he actually omits any mention of the noblest, and in some respects the most characteristic, of Kant's ethical ideas, the second form of the categorical imperative, which requires that every rational agent be treated always as an end, never as a means only. Again, in this day of general interest in social problems and the ethics of the political and economic relations, it is a great mistake to pass over completely the 'Rechtslehre.' That part of Kant's theory is intimately related to his fundamental conceptions; it expresses what he believed to be the bearing of his ethics upon mooted practical issues; and it constitutes one of the most curious and elaborate attempts in history to work out a social and political philosophy by starting from the individualistic conception of the inherent right of every person to full liberty of self-determination. It is a doctrine obviously anarchistic in its real tendency, though the tendency is one that Kant contrives with considerable ingenuity to deflect. An incorrect explanation is given by Külpe of so important a Kantian term as 'autonomy of the will'; it has nothing whatever to do with 'the battle of the enlightenment against all forms of external authority.' Kant's philosophy of religion is even more insufficiently covered.

In short, Külpe's special interest and competency appear to be confined to the epistemology. The analysis of the *K. d. r. V.* is fairly adequate and satisfactory; but the student of philosophy will turn with most curiosity to Külpe's critical discussion (pp. 72-96) of the fundamental issues. At the close of his other, widely-read volume in the same series ('Die Philosophie der Gegenwart in Deutschland') the author laid down a problem and sketched a program which this discussion resumes. Külpe appears to offer the somewhat unusual doctrinal combination of (a) physical realism and a belief in the metaphysical scope and realistic implications of natural science, with (b) a recognition of 'logically' *a priori* knowledge and of the presence in our minds of necessary or coercive truths [so I interpret pp. 73, 91-92], and (c) some obscure sort of 'genetic' empiricism, associated with a belief in the supremacy of the *realwissenschaftliche* standpoint. The justification of (a) calls, as Külpe observed in his earlier work, for a thorough *Auseinandersetzung* both with dialectical idealism and with the anti-metaphysical interpreta-

tion of natural science of Mach; this we hardly as yet get. The negative criticism of Kant's confused and inconsistent arguments for the limitation of knowledge to 'objects of possible experience' is, however, clear and successful. But a critic of Kant who maintains, not only that in physical science we have direct access to realities *an-sich*, but also that we are in a position to make metaphysically valid and necessary universal judgments about the nature of physical things and not merely about the contents of experience up to date—such a critic seems, not to be transcending Kant, but to be simply ignoring the issues and difficulties raised by the English epistemologists, with which Kant at least attempted to deal. Külpe, indeed, has recognized that his enterprise amounts to a revival of the pre-Kantian, or pre-Humian, rationalism. There is undoubtedly a great deal of profit still to be gleaned for philosophy from such a return 'back of Kant'; but in the return, Hume and Berkeley are persons who will have to be dealt with more effectively than Külpe seems to me thus far to have dealt with them. The problems of eighteenth-century epistemology still need to be worked out afresh; and in the outcome an adjustment—by no means identical with Kant's—of the conceptual rationalism of the German school with the skeptical rigor of the British empiricists will be found possible. But I do not think that Külpe has given us the requisite formula for the combination. Meanwhile, since his position has so much affinity with that of the 'dogmatic' rationalists, it is surprising to find him repeating the usual, essentially incorrect accounts of the position of the Leibnitio-Wolffian logicians, and of their relation to Kant. That, like some other of the accepted parts of the history of philosophy, especially of some connected with Kant, is mostly a *mensonge convenu*. No one who was, for example, mindful of the textbook of Wolffian logic which Kant himself used—Meier's 'Vernunftlehre,' 1752—could accuse that school of the absurdity of overlooking 'the essential distinction between certainty and probability, conviction and conjecture, the experienceable and the unexperienceable' (p. 96). Up to a certain point, these logicians used much more critical rigor than is invariably found among contemporary philosophers. While unjust to these earlier German thinkers, Külpe's book is—though decidedly appreciative—comparatively free from that unphilosophical *Kant-Schwärmerei* which is the prevailing mode in Germany.

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Thought and Language. J. MARK BALDWIN. *The Psychological Review*, May, 1907. Pp. 181-204.

This article is from the material of the writer's work, 'Thought and Things,' Volume II., and takes up the problem of the development that logical meanings undergo in relation to language. Logical meanings are for him contexts of thought 'common in the sense of being "synnomic" or "appropriate" for the acceptance of all competent judgment everywhere'; this common character rests upon a genetical process which is

both experimental, or personal, and social. Building upon the knowledge that already has social confirmation, the individual forms new judgments which he projects into the world, which he assumes, and for which he seeks anew the synnomic judgment of society in order to arrive at the attitude of belief. Again, society must refer its opinions to the expert individual thinker to whom social judgment looks for its reconstruction. Thus there is a dialectic growth and truth, or thought, which remains always unfinished or experimental, being continually submitted to the two tests of 'commonness' and 'reasonableness.' The two modes of predication which make this growth possible are proposal, which means assumption in the speaker or hearer, and elucidation, which means that belief is present before predication takes place. As knowledge is thus social as well as individual, it is language which makes thought common, which gives it social meaning, and it is, therefore, the instrument of the development and conservation of psychic meaning. All those strictly private meanings, appreciations and quasi conative ones never acquire social nor, indeed, adequate personal validity and hence fail of linguistic embodiments. "The gradual development of language shows the impulse and necessity for intercourse both as pedagogical instrument in the hands of society and also as vehicle of the individuals in forming and reforming work in society."

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Aphasie et amnésie. Réponse à M. le Professeur J. Grasset. DR. SURBLED. *Revue de Philosophie.* X. Pp. 109-114.

In a preceding review Dr. Grasset's article was discussed. The present synopsis deals with the very clear and pointed answer of Dr. Surbled. Dr. Surbled upholds strongly the contention of Dr. Marie that aphasia and amnesia are two phases which should not be confused. When a patient is intellectually weak, such weakness is simply a defect of memory, and as such something different from aphasia. Again, expression of emotion felt may not be excited at the thought of such emotion, as Dr. Grasset has shown. This shows, so Dr. Surbled holds, that the affective memory is retained while the memory for impression is lost. So, too, the poor cook who can not prepare fried eggs on a spoken order is neither a fool nor an idiot, but simply one who has lost his memory of the culinary processes. Amnesia, and not aphasia, is the cause of the trouble. The seat of the memory, according to Dr. Marie, is in the left temporoparietal lobe. It is not the intellect as a whole which is affected, but only some special memory which has lapsed.

It is rather difficult to follow a three-cornered argument, especially when the basis, Dr. Marie's work, is not given in full. One may perhaps avoid any dogmatism on the matter by using Dr. Surbled's expression, "Le mieux est d'avouer notre ignorance." The papers as given are good as far as they go, but they do not go far enough.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. June, 1907. *La psychologie quantitative (2^e étude): La psychophysiologie* (pp. 561-592): J. J. VAN BIERVLIET. — The author attempts to discover both the strength and the weakness of psychological experiments, and the qualities and faults of the technique employed. Psychologists have determined approximate durations for certain psychic operations, but these are very indefinite and liable to be considerably modified by future researches. The psychophysiologists have accomplished more than the psychophysicists, but they are confronted by almost insurmountable metaphysical difficulties, such as measuring the time of apperceptions without proving experimentally that apperceptions exist and are distinct from perceptions. *Nature des hallucinations* (pp. 593-619): E.-BERNARD LEROY. — Hallucinations are not distinguishable by the intensity of the representation, its localization, the richness of imaginative details, nor by pure and simple exaggeration of the attention. They are characterized by a diminution of the voluntary attention and exaggeration of the automatic. *L'hallucination du point de vue psychologique* (pp. 620-643): L. DUPUIS. — Hallucinations are characterized by the disaggregation of the personal consciousness. They are to be explained on wholly psychological grounds and involve reference to the teleology of mental life. *Analyses et comptes rendus* (pp. 644-673): E. Dupréel, *Essai sur les catégories*: A. PENJON. E. Durkheim, *L'année sociologique*, IX.: G. B. R. Worms, *Philosophie des sciences sociales*, 3^e part: J. DELVAILLE. Waxweiler, *Esquisse d'une sociologie*: JANKELEVITCH. Delville, *La vie sociale et l'éducation*: G. COMPAYRÉ. Rivaud, *Le problème du devenir et la notion de la matière dans la philosophie grecque*: L. DAURIAC. J. Beare, *Greek theories of elementary cognition*: C. HUIT. E. Johnson, *The Argument of Aristotle's Metaphysics*: A. PENJON. Ellsworth Powell, *Spinoza and religion*: H. ROBOT. G. Marchesini, *La vita e il pensiero di Roberto Ardigó*: G.-L. DUPRAT. Elsenhaus, *Fries und Kant*: J. SEGOND. Klemm, *Vico als Geschichtsphilosoph und Völkerpsycholog*: J. SEGOND. *Table des matières*.

ZEITSCHRIFT FÜR PHILOSOPHIE UND PHILOSOPHISCHE KRITIK. July, 1907, Band 130, Heft 2. *Das Verhältnis des Pantheismus zum Theismus in Lotzes Lehre vom Absoluten* (pp. 113-141): P. SICKEL. — Lotze is consistent neither in his pantheism nor in his theism; and his compromise, which aimed at doing justice both to the understanding and to the spirit, is self-contradictory and untenable. *Der Erkenntniswert der chemischen Synthese* (pp. 141-164): O. v. D. PFORDTEN. — A theory of 'conformism' in opposition to both phenomenalism and realism. *Zur Verteidigung der Möglichkeit des freien Willens; erster Artikel* (pp. 165-192): R. MANNO. — The possibility maintained of a spontaneous change in direction in one of the masses of a mechanical system. *Die Erneuerung der Friesschen Schule* (pp. 192-202): O. SIEBERT. — The scientific development of Kant's position is through Fries and Apelt, not through Fichte, Schelling, Hegel or Schopenhauer. *Der*

freie Wille; eine Frage (pp. 202-208): K. B. R. AARS. - *Eine Textverwirrung in Leibniz' Nouveaux essais bei Gerhardt* (pp. 204-206): R. FALCKENBERG. - Two important accidental omissions in the edition named. *Rezensionen*: W. Windelband, *Über Willensfreiheit*: G. NOTH. O. Pfister, *Die Willensfreiheit*: G. NOTH. E. Durr, *Über die Grenzen der Gewissheit*: R. HIRSCH. *Notizen. Die Eingegangene Schriften. Aus Zeitschriften.*

ANNALEN DER NATURPHILOSOPHIE. August, 1907, Band VI., Heft 2. *Über Grenz- und Ultrafunktionen* (pp. 97-120): V. GOLDSCHMIDT. - A compendium of the several senses in respect to the limits of sensation and the physical changes to which we are insensible. *Zum Ablauf des Lebens* (pp. 121-138): W. FLIESS. - An attempt to show that birth, death, menstruation periods, and some forms of sickness occur periodically on the basis of the numbers twenty-three and twenty-eight. *Über die Grundlagen des Gesetzes von Weber-Fechner und der Dynamik des Gedächtnisses* (pp. 139-150): A. SCHUKAREW. - An attempt to establish an analogy between the processes of consciousness and chemical changes. *Absolute und Relative Bewegung* (pp. 150-153): W. M. FRANKL. - A brief essay in definition. *Der exakte Artbegriff; seine Ableitung und Anwendung* (pp. 154-216): K. HOFMANN. - An organism, to be treated scientifically, must be conceived as a crystal; and organisms are of the same species which agree in all crystalline characteristics. And the higher genus shows agreement in all those characteristics save the one that is of least systematic value. From this definition follow: Haeckel's theses regarding the basal forms of organisms; the theory of pangenesis as developed by De Vries; the laws known as the Mendelian; and also those statistical formulæ which bear the names of Quetelet and Galton. Some illustrations follow, by way of verification. *Zum Menschlichen Raumproblem* (pp. 217-228): W. SCHOLDTMANN. - The Kantian position is not affected by experimental psychology. *Nochmals über das nächste Problem der Chemie* (pp. 229-240): F. WALD. - A plea for the empirical standpoint. *Kritische Bemerkungen zur modernen Mathematik* (pp. 241-249): J. BAUMANN. - Discussions of Cantor's theory of the infinite and of non-Euclidean geometry. *Neue Bücher*: W. O. O. Braun, *Friedrich von Schellings Vorlesungen über die Methode des akademischen Unterrichts*. C. Schreppe, *Lessing als Philosoph*. E. Metschnikoff, *Essais optimistes*. P. J. Möbius, *Ausgewählte Werke*, Bande VII. and VIII.

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NOTES AND NEWS

RENÉ FRANÇOIS ARMAND SULLY-PRUDHOMME died suddenly on September 7. The following account of his career is from the *Nation* for September 12. "He was born in Paris in 1839, the son of a merchant. After completing the courses in science and philosophy at the Lycée Bonaparte, he began work in the office of an ironmaster at Creusot. This employment he abandoned with the intention of entering the legal profession, and he actually began as a notary's clerk. But his inclinations were in the direction of literature; and in his twenty-sixth year he published his first volume, 'Stances et poèmes,' which secured the enthusiastic recognition of Sainte-Beuve. One poem, in particular, 'Le vase brisé,' was singled out as a little masterpiece, equally noticeable for its exquisite finish and its delicacy of sentiment and style. Fortunately, a modest patrimony enabled him to devote himself to literary work without wholly depending on it for a livelihood. His second collection of verse, 'Les épreuves,' appeared in 1866; in it he expressed the sadness of unbelief. Three years later followed 'Les solitudes' and his rhymed translation of the first book of Lucretius, 'La nature des choses,' in which he wrote a brilliant and widely discussed preface. 'Impressions de guerre' (1870) dealt with some of the phases of the Franco-Prussian War; 'Les destins' (1872) and 'Vaines tendresses' (1875) are of a more personal nature. These writings established his reputation as one of the most *prisme: poésies diverses*, published in 1886, was a return to the more distinguished for lofty sentiments and philosophic ideas. His first great philosophical poem, 'La justice,' appeared in 1878, and to it he owed his election to the French Academy in 1881. In this poem he insisted upon the justice which he found in universal nature. His next work, 'Le prisme: Poésies Diverses,' published in 1886, was a return to the more personal style. His best known poems, however, and those on which his reputation most firmly rests, embodied idealized philosophical conceptions, such as solitude, justice and happiness. 'Le bonheur,' 1888, is a sort of vision of the progress of humanity toward the ideal state of supreme happiness. M. Sully-Prudhomme's 'Testament poétique,' 1901, won the Nobel prize over such competitors as Ibsen, Tolstoy, Frédéric Mistral, Sienkiewicz, Ossip-Lourié, Hauptmann, Rostand, D'Annunzio, Freitag and Echegaray. Although by no means a rich man, the poet devoted a con-

siderable portion of the prize to establishing an annual award for excellence among the younger French poets. As a critic he published two volumes, 'L'expression dans les beaux arts' and 'Reflexions sur l'art des vers.' He wrote for the *Revue des Deux Mondes*, among other articles an important study of Pascal. For many years before his death, a sufferer from rheumatic gout, he had lived a quiet life in his country house."

THE *Athenæum* summarizes as follows the discussion of the constitution of the atom at the recent Leicester meeting of the British Association, which showed how far from agreeing on this matter the learned physicists still are: "Thus Professor Rutherford himself avowed his belief in the existence of the positive electron, which he warned his hearers need not necessarily be what he called the 'mirror image' of the negative. This is, of course, in direct opposition to the views of Lord Kelvin and Professor J. J. Thomson, both of whom believe in an atom composed of negative electrons, the first named thinking that these are contained in a sphere of positive electricity, while the second pictures them as revolving round a core composed of the same substance—whatever that may be. In the same way, Sir Oliver Lodge professed his adherence to the theory that all matter is in the last resort composed of negative electrons only, and that all inertia is electrical in its origin; while Professor Soddy did not believe that the time had come for the assertion of the electrical constitution of matter, and thought that all the results of the researches of the last quarter of a century were explicable without it. Professor J. J. Thomson was not there to defend his latest theory, that the hydrogen atom is composed of one negative and one positive electron only, which Mr. G. A. Schott declared to be unworkable. Lord Kelvin, who spoke late in the debate, professed his disbelief in the idea that the mere motion of electrons could give to matter its different varieties and degrees of stability, and that radio-activity was a mere *remanet* from the kinetic energy of the atom."

IN Italy a scientific society has been founded in imitation of the British Association, and entitled Società per il Progresso delle Scienze. Thus far mathematics, natural science, engineering and political economy are selected for especial attention.

EDWIN GRANT DEXTER, Ph.D., professor of education and head of the department of education in the University of Illinois, has left the University to take up his duties as commissioner of education in Porto Rico.

PROFESSOR WILHELM STUMPF, the psychologist, has been elected rector of the University of Berlin.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE DOCTRINE OF THE EJECT

II. THE DOCTRINE OF DIRECT COMMUNION

OCCASIONALLY we find objections brought against what I have called in the last paper the common sense doctrine of the eject, on the ground that it makes our knowledge of other minds a matter of inference and refuses to admit that we know them immediately. I know of no writer who has developed the doctrine of the immediate knowledge of other minds in detail, and who has dwelt upon the consequences which follow from accepting it. Usually it is brought to our attention in the form of hints dropped in passing. Perhaps as satisfactory a presentation of it as we have is to be found in Professor Taylor's "Elements of Metaphysics,"¹ and I shall devote this paper to a brief examination of it as it is there set forth.

Professor Taylor regards the common sense doctrine as "popular and superficially plausible," but, nevertheless, as "radically false," and he thinks that its logical consequence is the belief that the real existence of our fellows is less certain than our own (p. 204). He holds that it may, from the following considerations, be seen that the argument from analogy is no sufficient basis for the belief in human experience beyond my own (pp. 201-205).

(1) "As ordinarily stated, the data of the supposed inference do not actually exist. For what I perceive is not, as the subjectivist assumes, three terms—my own mental life, my own anatomical structure and the anatomy of my neighbor, but two, my own mental life and my neighbor's anatomy." Of my own physical structure I know little, and I have to take it mostly on trust.

(2) Even supposing this difficulty surmounted, there remains a more serious flaw in the presumed analogical inference. "If I once have good ground for the conviction that similarity of inner experience is attended by similarity of physical structure, then, of course, I can in any special case treat the degree of structural resemblance between one organism and another as a sufficient reason for in-

¹ London, 1903.

ferring a like degree of resemblance between the corresponding inner experiences. But upon what grounds is the general principle itself based? Obviously, if my own inner experience is the only one known to me originally, I have absolutely no means of judging whether the external resemblances between my own organism and yours afford reason for crediting you with an inner experience like my own or not."

It will be observed that, in his first objection, Professor Taylor hardly does justice to the analogical argument. Men actually draw inferences from what they know of themselves and what they observe in others—not from an unknown something which it remains for science to discover. Neither the intelligent child nor the grown man concludes that one man is good-tempered and another ill-tempered, one stupid and another intelligent, one happy and another in pain, by having recourse to the anatomy and physiology of the nervous system. There are multitudes of analogies which are open to observation, and upon these we depend in our inferences.

And it will be observed that the second objection is the one usually brought forward by those who consider the possibility of solipsism, though they may not themselves be at all inclined to become solipsists. It is the consideration that has influenced Huxley and Clifford and the rest to speak as they have done. This objection I shall touch upon in the next paper.

Here I am concerned only to see what Professor Taylor wishes to substitute for the doctrine he rejects, and to judge whether the substitution appears to be satisfactory or not. What he offers us for the analogical argument of which we are deprived is the following (pp. 205–206):

"How, then, do we actually learn the existence of feeling, purposive experience outside our own? The answer is obvious. We learn it by the very same process by which we come to the clear consciousness of ourselves. It is a pure blunder in the subjectivist psychology to assume that somehow the fact of my own existence as a center of experience is a primitive revelation. It is by the process of putting our purposes into acts that we come to be aware of them as our purposes, as the meaning of our lives, the secrets of what we want of the world. And, from the very fact of our existence in a society, every step in the execution of a purpose or the satisfaction of a want involves the adjustment of our own purposive acts to those of the other members of our social whole. To realize your own ends, you have to take note of the partly coincident, partly conflicting ends of your social fellows, precisely as you have to take note of your own. You can not come to the knowledge of the one

without coming by the same route and in the same degree to the knowledge of the other. Precisely because our lives and purposes are not self-contained, self-explaining wholes, we can not possibly know our own meaning except in so far as we know the meaning of our immediate fellows. Self-knowledge, apart from the knowledge of myself as a being with aims and purposes conditioned by those of like beings in social relations with myself, is an empty and senseless word."

I find the above passage in some respects puzzlingly indefinite. It would not have been worth while for the author to quarrel with the common sense doctrine merely on the ground that we can not have the knowledge of ourselves that we all have, when we have attained to years of discretion, without knowing a good deal about other people. We are all ready to admit as much as this, and it does not touch the argument from analogy at all.

The real question at issue is: Do we know other minds as immediately as we do our own, or is the knowledge of them indirect and representative? In repudiating the argument from analogy; in maintaining that we learn the existence of feeling experience outside our own by the *very same process* by which we come to a clear consciousness of ourselves; in asserting that it is a blunder to assume that the fact of my own existence as a center of experience is a primitive revelation; in telling us that we have to take note of the ends of our fellows *precisely* as we have to take note of our own:—Professor Taylor seems to teach that we know other minds immediately.

We find the same doctrine in other passages. Thus, we are told (p. 298) that "in actual life, until we come to reconstruct it in thought for the purposes of description and calculation, there are neither material bodies nor 'immaterial minds' nor 'consciousnesses' which are 'in' them or 'animate' them; there are simply sentient and purposive beings and the environment of things to which they have to adjust themselves in the execution of their purposes." Again, we read (p. 314): "So long as we are concerned with human existence as we directly find it in our immediate experience, or assume it in our practical social relations with our fellows, no question of the relation between body and mind can arise, because neither term of the relation is as yet before us. For my own immediate experience I am neither a body nor a soul, nor yet a composite of the two, but simply an individual subject of experiences in direct intercommunion with other individuals. Under the influence of conscious or unconscious dualistic prepossessions, we often speak as if it were a directly experienced fact that I can com-

municate with my fellow-subjects only indirectly through the medium of an alien 'material' body, and we sometimes contrast this supposed restriction with an imagined higher state of existence, in which 'disembodied spirits' may conceivably have direct intercourse with each other. But the truth is, that this direct intercourse and influence of one intelligent and purposive individual on another is no privilege reserved for our enjoyment in 'a better world than this'; it is, as we can see if we will only forget our dualistic prepossessions, the very truth about our actual life. In actual life, before we have contaminated our direct enjoyment of it with psychological prejudices, we know nothing of the interposition of an inert 'material' organization between ourselves and the members of our social environment."

These passages are more unequivocal than that quoted before. It is expressly affirmed that for my own immediate experience I am an individual subject of experiences in direct intercommunion with other individuals; it is expressly denied that we can communicate with each other only through the medium of the body. Nevertheless, we are told that we *directly find* human existence in our own immediate experience, and *assume* it in our practical social relations with our fellows; which certainly sounds as if in the one case we had immediate knowledge, and in the other were making an inference. It is just thus that the man talks who holds to the common sense doctrine; for him, our knowledge of others is not as direct as our knowledge of ourselves.

Now, notwithstanding Professor Taylor's rejection of the common sense doctrine, and his advocacy in the above cited passages of the doctrine of direct communion, I am inclined to think that, when we take his book as a whole, we find more said in favor of the common sense doctrine than is said against it.

Thus, we are informed that (p. 203) "both my own body and those of my fellowmen, as they are perceived by the various special senses, belong to the physical order, and share its qualities. But over and above its existence as a member of the perceived physical order, my own body has further another quite different kind of existence. It is, in so far as I perceive its parts, as I do other bodily existence, by the sensations of the various special sense-organs, a complex of presentations, like everything else in the physical world. But my body is not merely an object presented to me by the organs of the special senses; it is also something which I feel as a whole in common or organic sensation, and in the changing organic thrills of my various emotional moods. This unique feeling of my body as a whole accompanies every moment of

my conscious life and gives each its peculiar tone, and there seems to be no doubt that it forms the foundation of the sense of personal identity." For metaphysics, we are told, this double existence of my body, as an object presented as are other objects, and as an immediately felt unity, affords the key to the whole problem of the "independent" existence of a reality beyond my own presentations.

That is to say, the key to the whole problem of the existence of other minds is found in the immediate experience which I have of my body as a thing that can be perceived and a thing that can feel. Practical communion with my fellows is an illusion if no other body can feel as mine can. Hence we "attribute" (p. 204) such a sentient life as we are aware of having to others also.

We are assured that immediate feeling is incommunicable (p. 282); that my own inner life can be experienced by but one individual (pp. 282-283); that the bodies of my fellowmen are open to inspection; but that "it is necessary for all the purposes of practical intercourse to credit them with the same kind of sentience and feeling which I directly know in myself. This sentience and feeling are, of course, inaccessible to the perception of my own senses; I can see my fellow's eye and can hear his voice, but I can not see that he sees or hear that he hears" (p. 299).

This is good common sense doctrine; as is also the statement that what psychology calls its "facts" can not be directly exhibited to people, but that information about such may be communicated, since "we have in the physical conditions and concomitants of a 'mental state' assignable marks" which will help us to a knowledge of what the psychologist is trying to talk about (pp. 308-309).

In other words, we fall back upon the physical when we wish to communicate information about the psychical. And, although most of those who adhere to the common sense doctrine would demur to the definition of the body as simply a name for "a set of habitual reactions through which intercommunication between members of human societies is rendered possible" (p. 354), they would fully agree with Professor Taylor in thinking that the body does constitute our "medium of intercourse" (pp. 354-355).

Finally, the adherents of the common sense doctrine may be especially encouraged by the observation that one who tries to repudiate the argument from analogy seems compelled in working out his own theory not only expressly to recognize that doctrine, but to limit the application of the argument in the usually accepted way. On the grounds of "general metaphysical theory," Professor Taylor embraces a panpsychism, holding all nature to be animated.

But he admits that we have no means of proving this in detail, by the direct adduction of evidence. He writes (p. 209):

"This conclusion is not in the least invalidated by our own inability to say what in particular are the special types of sentient experience which correspond to that part of the physical order which lies outside the narrow circle of our own immediate human and animal congeners. Our failure to detect specific forms of sentience and purpose in what we commonly call 'inorganic' nature, need mean no more than that we are here dealing with types of experience too remote from our own for detection. The apparent deadness and purposelessness of so much of nature may easily be illustrated by comparison with the apparent senselessness of a composition in a language of which we are personally ignorant. Much of nature presumably appears lifeless and purposeless to us for the same reason that the speech of a foreigner seems senseless jargon to a rustic who knows no language but his own."

This is the frankest recognition of the argument from analogy. To the rustic who enjoyed "direct communion" with the mind of the foreigner, language would be superfluous; as it is, there confronts him the task of interpretation—he must learn to know indirectly what he does not and can not know directly. And it is clearly taught that where the analogy upon which we depend grows faint and finally seems to fade away altogether, our inferences are made with hesitation, or not at all, unless we fall back upon general metaphysical considerations. To my mind, such general metaphysical considerations are of no weight; but that does not concern the theme of this paper.

I have not written this paper merely for the sake of detecting inconsistencies in a book whose learning and acuteness I have remarked with pleasure. I have cited Professor Taylor's work, because we meet now and then with those who hold to the doctrine of direct communion, and it has been treated by Professor Taylor more fully and directly than it is usually treated. His failure to show that it is a satisfactory doctrine is an added argument in favor of its repudiation.

What has induced such a writer to give his adherence to so unsatisfactory a theory? I think the answer to this is to be found in the latter part of my last paper. As we go back to an early stage in our mental development, we do not find a clear consciousness of the distinction between our own mind and other minds. But, as has been pointed out, this does not imply an immediate knowledge of other minds. An ignorance of distinctions is not the same thing

as a knowledge of realities. But I shall not repeat what I have said in the paper referred to.

One thing, however, is worthy of remark. We are told that in "actual life" (p. 298) or in "immediate experience" (p. 314) there are neither material bodies nor immaterial minds, but "simply sentient and purposive beings and the environment of things to which they have to adjust themselves." But what shall we understand by "actual life"? Shall we take it to mean the first feeble glimmerings of the infantile consciousness? Here, of course, there is no distinction of material bodies and immaterial minds. But there is also no recognition of sentient and purposive beings and their environment.

Shall we understand by the phrase, actual life as it is experienced by the grown man? The grown man, however unscientific, is certainly conscious of the distinction between mind and body, though he may find it hard to define it. Indeed, I think we shall find that the developing intelligence is always able to understand what is meant by *body* and *mind* and the *world*, quite as soon as it is able to grasp what is meant by *sentient and purposive beings and their environment of things*. As a matter of fact, the one expression means just what the other does; the only difference is that the latter is couched in the language of the philosopher, which has the disadvantage of being more unfamiliar than the language of common life.

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DISCUSSION

PROFESSOR PERRY ON PRAGMATISM

IN the innumerable replies and rejoinders of pragmatists to their critics there has been a pretty constant and often almost plaintive contention that much of the critic's case against the pragmatist is due to the fact that the critic at some point attributes his own conceptions to the pragmatist and then exhibits in triumph the impossibility of harmonizing these conceptions with other pragmatic doctrines.

In his interesting and able review of pragmatism (Nos. 14 and 16 of the current volume of this JOURNAL), Professor Perry has obviously aimed to avoid this. And in a larger measure than usual among the critics, he has succeeded. However, it seems to me that

in spite of this good intention there are some passages that are likely to call out the old complaint.

Professor Perry's interpretation of the factors involved in the pragmatist's view of the logical process is:

"1. *Reality, or Beliefs already Fixed.*—This element of experience is the object (this term now appearing for the first time) in so far as already known. The pragmatists would seem to disagree among themselves as to whether sensation belongs to this category or to the next. Let us designate this factor of the situation by the letter *M*.

"2. *The Object as Problematic.*—This is the disturbing factor, consisting in a sensation as yet unresolved, or in a general discord which makes the situation practically unworkable. Let us designate this factor as *X*.

"3. *Ideas, or, to quote Professor Moore's phrase, 'Instruments of Reconstruction.'*—These elements, which we may designate as *a'*, *b'*, *c'*, are tentative interpretations of *X* and mark the period of deliberative hesitation.

"4. *The Noetic Interest.*—Herein appears for the first time the subject or the knower himself, experienced as a particular need actively attempting to relieve itself. Let us designate this as *S*. *S* is not to be identified through its content so much as through its 'polar' relation to *O*."

With the understanding that in equating the datum or fact element with reality, the latter must be taken in a strictly logical, not a metaphysical, sense (since metaphysically the ideas are as real as the reality in paragraph 1), and with the agreement that the fixity of this reality is not absolute, most pragmatists would, I think, accept the essence of the first three paragraphs. But the fourth is pretty sure to raise a protest at once. Here, it will be said, is where the imputations begin. First, the protestor will say, the very heading of the paragraph, especially since it appears independent of the ideas in 3, suggests an anti-pragmatic view—that of a pure, isolated, and sufficient-unto-itself noetic interest. The pragmatist speaks freely of interest *as* noetic, but he is likely to shy a little at the noetic interest when it appears as something over and above ideas. He is likely to say that one form of the issue between pragmatism and its critics is precisely whether the noetic activity is a special and original form of interest or only a function *of* or *in* interest.

On the relation of the noetic interest to the ideas in 3, the objector will probably insist that the noetic interest, or, rather, the noetic phase *of* interest, is carried by the ideas, and will inquire how there can be a noetic interest outside of ideas.

But if there is any question about the anti-pragmatic character of the heading of paragraph 4, many pragmatists will be sure that there is none in what follows about the necessity of a subject or knower over and above or under, at any rate in addition to, the ideas in the logical process. On the preceding page Professor Perry quotes from Professor Dewey's article¹ on "The Experimental Theory of Knowledge" and presumably must have read the entire article. In that article is the following: "The second [referring to the view that the object is immediately known by a subject] is a pseudo-immediacy, which in the same breath that it proclaims its immediacy smuggles in another term (and one which is unexperienced both in itself and in its relation), the subject, or consciousness, to which to relate the immediate." Again: "It is the identification of presence in consciousness with knowledge as such that leads to setting up a mind (ego, subject) which has the peculiar property of knowing (only so often it knows wrong!)." To this might be added: "The moment it is recognized that the logical fact-meaning duality is not to be identified with the technological object-agent duality, a large part of the present confusion of logic and of psychological epistemology clears itself up—it simply evaporates."²

Yet in the face of this, not to mention the steady stream of similar doctrine from Professor James and Dr. Schiller, we find the "polar relation" between a subject, on the one hand, and an object, on the other, set forth as the pragmatist's own view of the noetic process!

To be sure, pragmatists do not all state the logical process alike. It is described now "as a relation or interaction between ideas and things," and again "as a relation or interaction between things *through* ideas." Whether in the end these two statements come to the same thing, they certainly do not regard a subject or knower in addition to ideas as necessary to the logical process as such. This does not say that there is no knower, nor does it imply that there is no self. It means that whatever of a self there is, it appears in the logical process only as the ideating activity. The idea is the self *as* knower and therefore *is* the knower. And in support of this the objector would probably ask just what logical function does this extra-ideational subject or knower perform which the idea does not.

That this is one of the cases of attribution of the reviewer's own ideas of which the pragmatist has so often complained, seems clear from the identity between the conception of knowledge attributed to the pragmatist in this paragraph and that upon which Professor

¹ *Mind*, N. S., Vol. XV., No. 59.

² This JOURNAL, Vol. IV., p. 255.

Perry bases his objections to pragmatism throughout the discussion. The principal theses of Professor Perry's own view appear to be: (1) that truth must "envisage" or "coincide" with or be "identical" with reality (pp. 372, 374, 422); (2) that the object "is the element which plays the determining part in the constitution of truth" (p. 374); and (3) that the only purpose or intention to which truth is relative is just "the intention to know . . . not the intention to put the knowledge to some use" (p. 368). So here in this interpretation of the pragmatist's view the subject or knower is further described: (1) as "a particular need" or interest which is satisfied when the object as problematic is "assimilated to" or "becomes homogeneous with" *M*, which is reality as fixed; (2) at the close of the paragraph the noetic problem appears also as that of overcoming the "objectivity or difference" of the object from *S*, the subject. In his summary at the close of his second article Professor Perry speaks of the problem entirely in terms of the relation between the knower, not the idea, and the object.

At any rate, pragmatists will hardly accept either of these statements as it stands. They will insist that the essence of the logical problem does not lie in the opposition between a self and an object, nor does the process of solution consist in "assimilating" the object as unknown "to beliefs or reality already fixed." In all the accounts I have read, pragmatists insist that knowing consists as much in the assimilation of the already known to the new as the reverse; that the already known is not finally known once and forever; that in new situations it has to be reknown. But still, since the new develops out of the old, the old is sufficient to serve as a base for further operations. But while a base is the *relatively* fixed element, it must nevertheless be movable unless our march is to be ever in a circle. Over and over pragmatists have insisted that "the given" is a point of *departure* rather than a fixed stake to which we are bound hard and fast. Of course, after the departure there is a return to the given, but only to discover that the work done during the departure necessitates a reconstruction of the given with which or from which we started.

The same point is raised at the beginning of the second paper, where Professor Perry says: "According to the pragmatist's own analysis, the satisfaction is legitimate and sound *when a judgment has been found which is consistent with that which is accepted as real.*" Now it is quite possible to interpret this pragmatically. But it is quite certain from the context that Professor Perry does not so interpret it. For I think by "that which is accepted as real" Professor Perry means that which is accepted as unalterably real *before*

the judgment is made. And for "consistent" with he uses elsewhere "coincident," "identical" and "homogeneous" with. But for the pragmatist "that which is accepted as real," *i. e.*, as *logically* real, is one factor *in* the judging process, not something *outside* to which the whole judgment must conform. Moreover, that which is accepted as real in the *beginning* of the judging act is so accepted *provisionally*, and may be quite different from that which is accepted as real at the *end* of the process. And if Professor Perry should say that it is this latter which he has in mind, the rejoinder would be that the judgment is no more made to consist with this than this is made to consist with the judgment, for this reality at the *end* is a reality with all the work of judging in it and never could be experienced without this operation. An ox or a monkey may die of tuberculosis, but he does not *experience* tuberculosis. That is reserved for a being who can *through* science, *through* thought, make a connection between the pains, fever, etc., and a certain kind of bacteria.

Passing from Professor Perry's exposition of pragmatism to some of his criticisms, his first point is that while he accepts the pragmatist's doctrine that truth and error are always relative to some intention, yet we must remember that that intention is nothing but the intention to know. This reminds one of Bradley's, Royce's, and Taylor's treatment of the categories of consistency, harmony, unity, etc. They tell us that the meaning of these categories is "always relative to some particular problem and purpose," but when we ask to *what* particular purpose their application to absolute reality is relative, we are told simply to "the purpose to be consistent, harmonious, unified, etc." So also the idea is a form of will, but its only will is to know, that is, to be an idea. Formally this looks like a vicious circle.

But, formalities aside, as above the issue was between the noetic interest and interest *as* noetic, so here it is between the intention to know and knowing *as* intention. In short, we are back to the original question,—Just what is the process of knowing, and what is an idea? There is very little directly on these questions in Professor Perry's papers. Perhaps he thinks the announcement of his standpoint as realism should be sufficient. But there are so many brands of realism these days that one must have some details. However, the following general statements may give a line on Professor Perry's position. In the concluding paragraph of the first paper he says: "In this criticism I have not resorted to a general and vague insistence that true knowledge must 'correspond' to its object. I agree with the pragmatist that this is to take refuge in confusion." Yet

elsewhere we find the following: "A judgment is true in so far as it *coincides* with a proposition or complex entity which is found with its distinguishing character upon it and its consistency about it" (p. 379; italics mine). "So far as truth is concerned, the important element of the situation is identity or consistency with reality" (p. 422). "For realism truth consists in an experience of identification, such as, 'Here is a or $M + a$.' . . . Because it is truth it must envisage reality" (p. 374).

But if to state the relation between the idea or the subject and the object as one of correspondence "is to take refuge in confusion," it is difficult to see how a substitution of "coincidence," "identity" or "envisaging" for "correspondence" mends the matter. Most of those who think "correspondence" confusing are likely to find in "coincidence" and "identity" confusion doubly confounded. At any rate, it seems to me that in spite of Professor Perry's disavowal of correspondence, it is difficult to see what these passages mean if not a good old-fashioned envisaging, photographic realism.

Now, there is a realism, a functional, a dynamic or "operative" realism, which has very close affiliations with pragmatism. A realism, namely, which teaches that ideas lead into and help bring about other experiences different from themselves. In this difference between the ideas and the other experiences which yet allows a free passage from one to the other consists the realism. With the old realism it holds to the difference between the idea and its realization, but it contends that this difference consists in something more than that one is an envisager of the other.

If Professor Perry's realism is of the photographic, envisaging type, it seems in order to recall once more the questions which pragmatists from the beginning have been urging—questions which no one so far has dealt with directly and specifically—such questions as: If truth consists in identity and coincidence between an idea and reality, just what then is the significance of the *difference* between an idea and reality? Why when we have one do we want the other? And if there is a difference, must not truth be defined as much in terms of this *difference* as of the identity? Again, when there is *doubt* about the correspondence or coincidence or identity of the idea with reality, how is the doubt resolved? What is the criterion of successful identification? Yet again, if the object is the determining factor and the object is always there, how can there ever be any uncertainty? How can there be any *problem* of knowledge, to begin with? Why should the object ever fail to determine, or determine falsely? And if the object isn't always there, how can it always be the determining factor?

There is a proneness on the part of the critics to keep the discussion to the nature of truth as a *product*, whereas the pragmatists insist on the problem of *doubt, inquiry* and *error*. This tendency to take truth as a product only appears in Professor Perry's interpretation of the pragmatist's view of the relation between truth and use. Professor Perry speaks of the pragmatist's appeal to "the use of truth" in a way which makes the use begin *after* the truth is reached. But the use with which the pragmatist is concerned is the use of an *idea* in establishing *its* truth. The pragmatist could readily agree that *after* the truth of an idea is established the continued use of it in *similar* situations would not affect its truth.

The meaning of this may become clearer if we follow Professor Perry's illustration. He says (p. 368): "I may intend to vote for the man with the cleanest record, and proceed to discover him; but it is the latter intention alone, the intention to discover that one among the candidates who has the cleanest record, to which my ensuing belief is relative as respects its truth or error." Now I think a little analysis shows that the relation between the intention to discover the cleanest candidate and the intention to vote, and, therefore, the relation between the truth of the idea of who is the cleanest and the intention to vote, is much closer than Professor Perry allows. Of course, Professor Perry would grant that there is a pretty intimate relation of *motivation* between the intention to vote and the intention to find the cleanest candidate, but he will insist that the content of the latter is already there as a separate and independent affair "with its distinguishing characters upon it." But is it? What is the meaning of the cleanest candidate? Suppose there were no voting, no office-holding, no political party, would there be a cleanest candidate? It probably would be quibbling to insist that in such a case there could be no "candidate" at all. So let that be waived and let the question be, Would there be any cleanest man in the sense here meant, that is, *politically* cleanest? Does not the concept "clean" here mean a man to be voted for, to be put into office, to be entrusted with funds, etc.? Again, Professor Perry's conception of the cleanest man is different from that of the ward heeler; for the latter the cleanest man is the one who will be "white" to his friends. However, in either event, Professor Perry's case rests upon the assumption that the cleanness is there quite independent of the voting, and that the voting occurs because of the cleanness. But once more, suppose the whole voting system, with all that it implies, never to have started, would the *kind* of cleanness here sought still be there? If not, is it not just as obvious that political cleanness exists because of the voting, as the voting because of the cleanness? However, neither of

these antithetical statements of the situation does it justice, for the quality of cleanness and the activity of voting develop together as mutually conditioning differentiations within what Professor James calls the same social "*fundamentum*."

Following the illustration into the question of use raised above, suppose we have reached the point where the idea of *A-as-a-clean-man* emerges. In so far as there is only an idea there is not certainty. We "think" *A* is a clean man. How is this hypothesis to be verified or rejected? How, indeed, except by using, by following this idea until it leads or fails to lead to further experiences of *A's* cleanness sufficient to satisfy the demands of the original problem of whom to vote for.

No pragmatist has ever held that the transition from one experience to another, or, if the word experience is objectionable, the movement from one reality to another, takes place in a vacuum. He has never taught, as some might gather from some of the critics, that ideas create new reality out of the air. He speaks of the further development and reconstruction of experience or reality *through* ideas; of the idea as the form reality or experience takes to maintain and further itself. Of course the idea can not lead to a new experience unless the *material* for the experience exists. But the pragmatist holds, on the other hand, that before the appearance of the *idea* of a-politically-clean-man (still keeping to the illustration), that whatever quality men as husbands, fathers, merchants may have, these qualities are yet only possible material for political cleanness and become the "real" political cleanness as they cooperate with the idea of political cleanness. The idea of political cleanness transforms this material into political cleanness by bringing to it, or bringing it to, the demands of a new problem. And the pragmatist holds that this is a *real* transformation, that the idea brings things, *i. e.*, already organized activities, into new relations of interaction which result in a new reality. No doubt the paper with which I have just kindled the fire was already there, but it was not there *as kindling* until the *idea* of kindling appeared. It was through this idea that it came into relation with my hands, with the match, the wood, etc. So it is through the idea of political cleanness that *A's* qualities as husband, father, merchant, etc., are turned into a new direction and thereby undergo some actual qualitative change. The *real* political cleanness, then, is not there independent of and determining the *idea* of political cleanness. It is there only in *relation* to this idea. The idea is as much a determinant of the reality as is the already existing material. The whole matter is that the idea *and* the already existing material, the habits of father, husband, merchant, etc., are together working out a new reality.

But, it may be said, granting that prior to the idea of political activity there is only the material for political cleanness, even so this material must be recognized as material for that end and not some other, and this in a purely envisaging, photographic fashion. In other words, there must be the direct identification of the material. But the pragmatist could not allow the begging of this point under the term "identification." He will insist that the question here is, once more, What is identification? And will insist that it does not consist in an experience of identity between the idea and the thing, but the material is identified *as* it is found to *satisfy* the demand which the idea expresses. It is no more "identical" with the idea than food is identical with hunger. The relation is one of stimulus and response rather than one of identity, unless, indeed, we are willing to interpret identity as that which responds to and satisfies the demand which the idea defines and makes specific.

Professor Perry thinks that whatever strength the pragmatist's position has is due largely to the fact that he has selected for his illustration what he calls "truths of use" to the neglect of "simple perception," "in which the cognitive moment is seen to the best advantage" (p. 373). "To know," says Professor Perry, "is to see, whether with the bodily eye or with the eye of the soul" (p. 366). But is the case so simple as this? If knowing is just seeing, where does error come in? What distinguishes good from bad seeing? And is the reply of the Greeks to this, that the seeing is bad only in so far as it is not-seeing, sufficient? Also does not this conception of knowledge sink the distinction between immediate realizing experience and the mediating knowing experience? Surely there is a seeing that is not knowing. My seeing of a sun-lit cloud usually is not primarily cognitive. As I thread my way through a crowded street I am "seeing," but unless we are to abandon the distinction between practical and cognitive experiences the seeing here is a form of doing just as much as the walking. For the pragmatist seeing is knowing *only* when it occurs in connection with an *inquiry*. It seems impossible for the critic to *keep* in mind that for the pragmatist *knowing is inquiring and knowledge is the result of inquiry*.

In this sense of belonging to a process of inquiry all truths or, rather, all ideas, are ideas of use. If sense perception can be simply given out of all connection with any sort of inquiry, it is not, as such, for the pragmatist cognitive. It is then directly practical or esthetic. Once more, suppose there is *doubt* and consequent inquiry about a case of sense perception, what would be Professor Perry's account of its resolution?

The crucial thesis in pragmatism, Professor Perry says, is this:

"The mark of the truth of knowledge is the satisfying character of the practical transition from cognitive expectation to fulfillment, or of the resolution of doubt into practical immediacy" (p. 371). In spite of the care which Professor Perry says he gave to phrasing this, the term "mark" still appears ambiguous. Ordinarily it means criterion, sign, or test. In this sense the thesis would be a familiar enough pragmatic doctrine. But then it would lose its crucial character for Professor Perry. The crucial character appears in Professor Perry's revision of the thesis a little further on, in which he says: "The essence of the matter is the degree to which the satisfying character of the crucial moment *constitutes* its truth." Here, "mark" means "constitution," which is quite a different affair from "criterion" or "test," and is one for which Professor Perry should have given chapter and verse, for I am sure no pragmatist will own it. For the pragmatist, the truth of an idea consists in its capacity to "lead" to the experience which it promises. And as stated above, in discussing Professor Perry's illustration, this capacity is neither a matter of chance nor by the grace of the absolute, but is due to the fact that the idea is born out of that very "*fundamentum*" of "reality" or "experience" (what you will) in which it works. Professor Perry well says, "There must be a ground for this satisfaction." It is just this ground which, absolutism having failed to supply, the pragmatist has sought in the immediate activities of social life.

Professor Perry's remarks on the last topic—"Knowledge Modifies and Adds to Being"—have perhaps been sufficiently anticipated. However, the issue between Professor Perry's realism and pragmatism is here very sharply drawn and calls for an additional word. Professor Perry's point is, of course, that objects known are "not essentially modified" by the act of knowing. (I wonder just how much reservation the qualifier "essentially" carries.) Professor Perry would grant, I suppose, that if the act of knowing as such does not essentially modify the object known, it in some mysterious way *leads* to acts that do. But if the alteration does not begin in the knowing process, where does it begin? In what way does the knowing lead to the activity that does alter the object? If I am hungry and bethink me of a sandwich on the sideboard, and if I say that the act of thinking does not essentially modify the sandwich, where does the "essential" modification begin? When I reach for it? When I touch it? At the first bite, or the second?³

³ These questions bring up the entire subject of qualities and relations, into which we can not go here. But it is interesting to note that Mr. Bradley finds an envisaging knowledge of reality impossible just because the establishing of new relationships is the beginning of "essential" modifications.

Professor Perry here appeals to knowledge of past and future objects and events as the crucial support of his denial of the real efficacy of thought. At the same time he contends that past and future objects and events have as real an existence as the present. I am not prepared to discuss this point in detail, but shall say that *if* they do so exist and can enter into new relation with each other and with the present, then they must be subject to modification in the same sense as the present.

In concluding Professor Perry says: "It seems absurd to contend that knowledge makes the world." But who has so contended? The pragmatist's contention is that knowledge *helps* to make, in the sense of assisting in remaking, the world. Professor Perry concedes, however, that "knowledge does make *its* world." "It may even be said to make *our* world. But there is a tremendous significance, practical, philosophical and religious, in this difference between our world and *the* world." In appreciation of this "tremendous significance" the pragmatist would yield to no one. Indeed, it was by just this "tremendous significance" that the pragmatist was conceived and brought forth. But for him this "tremendous significance" is that in so far as the distinction between *our* world ("our" including all conscious beings) and *the* world is widened by just so far the abyss of phenomenalism and skepticism is opened.

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REVIEWS AND ABSTRACTS OF LITERATURE

A Primer of General Method. Being an Introduction to Educational Theory and Practise on the Basis of Logic. SIDNEY EDWARD LANG. Toronto: The Clark Co. 1906. Pp. x + 224.

This volume, as its subtitle indicates, is a consideration of the bearing of logic upon educational theory and practise. It is especially designed for instruction in normal schools, and is evidently written with this end in view. The author has succeeded through clear statement and suggestive illustration in sustaining the interest of the reader throughout. His discussion of the theory of logic is given in simple language relieved of all technical terminology and formal rules. The subject-matter of the book is divided into four parts: Part I., The General Nature of Knowledge; Part II., Judgment and Inference; Part III., Systems and System-making; Part IV., Concrete Problems of Education. To the main body of the work there is appended a set of questions and exercises.

The author's point of view is that of unqualified pragmatism. An adequate criticism of his theories would involve a complete review of the

principles of pragmatism, which it would be out of place to attempt here. However, there are several structural weaknesses of the pragmatist's position which seem especially emphasized when revealed in the discussion of logical theory. For it is in the grounding of sound logical doctrine that the pragmatist's plausibility fails to carry conviction, and the impression is left that his efforts in this field are merely a brilliant *tour de force*. Mr. Lang recognizes as one of the cardinal doctrines of his theory of logic, the systematic necessity of judgment. He says (p. 58): "We often say, 'I am forced to the conclusion that so and so is the case.' The *ground*, that is, as we have just said, the way in which the parts are related in the system within which we are judging, compels us to state results or conclusions which may indeed in certain cases be unwelcome. For the reason, then, that we judge not as we wish, but as we must, judgment is said to be *necessary*." Now the element in this feeling of compulsion which expresses logical necessity is free of all pragmatic sanction. Given certain data, we are constrained to expect certain results. When put to the test of experimental verification, and the results do not materialize as we had been led by the process of inference to expect, we do not challenge the integrity of our logical faculty, but at once proceed to re-examine our original data. That the consequent *must* follow, if its proper antecedent is given, is a statement of logical necessity, and as a constant and universal expression of the logical necessities attending every form of inference, it swings clear of all pragmatic variability. The question as to whether a given antecedent is properly connected with a certain consequent is quite a different one.

Again, in the author's treatment of the subject of hypotheses, he makes the following assumption: "Whatever hypothesis we form in a given set of circumstances is formed under the consciousness that we must act in some way." This would seem to be a very narrow view to take of the great world of knowledge. Take some of the famous hypotheses of science, the nebular hypothesis, the theory of gravitation, the Copernican theory, the theory of evolution, or the theory regarding the ebb and flow of the tides. To connect any one of these hypotheses with the practical needs of man, as regards either the history of its origin or its present pragmatic significance, would be a most unnatural and strained procedure. The view that the earth is stationary and that the sun actually rises and sets, is a far more useful, convenient and practical idea than the Copernican theory. It works, and works so completely that our language has never been altered to square with the wider range of new knowledge. For the astronomer it does not work. Let him satisfy himself with a different theory; but for the practical man it stands the pragmatic test most adequately. Again, Mr. Lang speaks of the necessity of "organizing into a systematic whole of each bit of knowledge that we possess" (p. 48). Now, while each bit of knowledge may have a practical value which is obvious, it is impossible to have before us as a conscious methodological procedure the practical ends involved in the systematic whole. Such a whole is too complex to reveal its ends even in an insig-

nificant degree. We can not construct part to part, and adapt part to the whole, according as we are guided by our knowledge of the ends which the complex nature of the whole implies.

We construct our body of knowledge on simpler lines and by simpler methods. We follow the lead not of far-off and concealed ends, but rather of the nature of the separate parts as they are in themselves, and as related to each other. The most useful functions of these various bits of knowledge are often revealed only after they have been long stored in the memory, and then by some happy chance or by a combination of circumstances never before occurring. The author, moreover, regards the disjunctive judgment as expressing the nature of a system, "not in its relation to anything else, but as a self-related whole with an individuality of its own" (p. 81). Here is certainly one logical form at least which is not concerned with the adjustment of means to ends, and of practical values, but exhibits that which is an end in itself. Concerning a comprehensive knowledge of such systems, is not the question, naturally, "What is it?" rather than, "What am I to do with it?"—the latter, according to Mr. Lang, being the attitude of mind which is essential to any true method of acquiring knowledge. It is certain that progress in science has been characterized in a peculiar sense by a freedom from an exclusive consideration of practical ends. If the curiosity of searchers after truth had been confined to the investigation of the phenomena of nature and of life for the sake of discovering practical values solely, the world of knowledge would be sadly diminished in extent and significance, and even the practical needs of man would be less adequately and less admirably supplied. To cite but a single instance, it was a purely speculative interest which led such men as Henry and Faraday to devote their lives to the study of electricity and magnetism. Theirs was no compulsion of utility, but an all-absorbing desire, a passion, indeed, to know things as they are. Yet out of their researches have come the vast array of electromagnetic inventions which have contributed so incalculably to the welfare and comfort of mankind. How often the practical value of a truth appears unexpectedly, like a by-product, which direct research would never have revealed.

As regards the author's application of his doctrine to the theory of education, the same pragmatic strain is visible throughout. He insists that the teacher should be ever mindful "that the only reason we have for getting knowledge is that it enables us to do things more efficiently, and that knowledge is valuable only so far as it is a guide to right action" (p. 172). This ideal also, he insists, should be early inculcated in the pupil's mind and never lost sight of at any moment of his study. Mr. Lang throughout confuses the two ideas of being interested in what one is studying and being interested in the practical utility which the subject-matter may possess. It is possible, and, indeed, essential, in my opinion, that the interest of the student should be stimulated by the rich material which certain subjects contain as an end in itself, and not always as a mere means to some practical end which it serves to accomplish. If the

child has early impressed upon his mind that utility is the sole motive in the acquisition of knowledge, and if he lives in such an atmosphere through the formative period of his life, there will inevitably follow a dwarfing both of his intellectual powers and of his character. Truly there is enough of commanding interest in the study of nature, of bird and animal life, of trees and flowers, of the marvelous phenomena of physical science, of chemistry and astronomy, of the events of history and the various creations of human thought and fancy. The child naturally can become so charmed by the beauty and mystery of the world of wonders about him that he will early learn to value certain kinds of knowledge, at least for their own sake. It is true that knowledge is power, but that should not be ever held out to the child as an alluring bait. Knowledge can compel homage and devotion without stooping to offer a bribe, or to cry the value of its wares in the street. I would also urge the consideration of those indirect uses of knowledge which can never be consciously before pupil or teacher in the process of instruction. They are too subtle, too far-off in their effects, too complex, too cumulative for any one to detect, and name, and tabulate. They can not be pointed to as the obvious reward of industry in learning lessons and keeping one's copy-book neat and clean. I refer to what may be called the atmosphere of knowledge, the fine flavor of thought, the sound reason and right judgment which characterize richly stored minds. If a child is interested solely in what can be pointed out to him as serving some useful practical purpose, he will be very poorly equipped as regards both his available fund of knowledge and his skill to use it in the face of some emergency or of a wholly new and unfamiliar experience. This, then, is the paradox of knowledge, that he who regards knowledge as a mere servant is never completely master of it, but he who regards himself as the servant of knowledge is alone master in the realm of thought.

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Practise and Science of Religion: A Study of Method in Comparative Religion. JAMES HAUGHTON WOODS. New York: Longmans, Green & Co. 1906. Pp. viii + 123.

This little book consists of six lectures, developed under the influence of Kaftan, Harnack and Windelband, delivered at the General Theological Seminary in New York, and "given to the search for positive ground common to many religions" (p. viii).

It is first pointed out that the rise of a *new* science of religion is quite parallel to the development in other phases of life (practise, art, science), whose tendency is to bring problems and assumptions to the test of personal experience rather than attempt their solution by the traditional and *a priori* methods; that yet extreme individualism and impressionism must be corrected by getting our experiences into some order and system and by the discovery of a single standard of relative values; and that the point of view of the science of religion is the same as that of all modern sci-

ence, which aims at description, classification, explanation and relative valuation.

The "levels of value" in religion are determined by the type of judgment implied in the religious experience, which is itself essentially affective and active. Judgments of value are either "accidental" (concerned with the momentary, partial self) or "necessary" ("grounded immediately in the inner experience of the person" [p. 27], asserting "an end upon which he will stake his life" [p. 63]); the latter only are religious. On another basis valuational judgments are distinguished as (a) individual or personal, (b) collective or social and (c) universal, normative or metaphysical; and these determine the three essential levels of religion. A merely individual judgment is not religious. The distinction is largely quantitative; yet the universal judgment is non-experiential, and implies an absolute experience which is exhibited, now as transcending, now as synthesizing, the finite facts. Indeed, the relation of the universal and particular, or of ideal and actual, is not satisfactorily stated.

Following are considered in successive lectures: (a) primitive beliefs, (b) ancestral systems and (c) mystical ideals, as involving, respectively, individual prereligious judgments, collective judgments and normative judgments. No sharp distinction is made between the mental attitudes of (a) and (b), and (b) involves normative judgments, at least in the sense of their subjective felt necessity. Primitive beliefs, revealed by ethnological study, are expressed either directly in dramatic rites, such as the religious dance, or indirectly in verse and prose; and of these the meaning of the direct mode is the easier for the student to appreciate. In the advance from the impulsive self of the savage to the self of mediated social fulfillment, religion serves to define the life ideal. The tribal god is the projection of the various emotions of his worshipers and their crystallization in a personal unity. It is the tribal will in which individual wills are merged. The god idea grows more fixed and definite while the god grows more social and authoritative. The value of the idea depends more on esthetic and pragmatic than on logical considerations.

Much is made of the difficulty, in the study of these earlier stages, of interpreting the primitive mind and its attitudes. That mind is "like the mind of a child or of a hypnotized subject" (p. 74). It is "a mass which passively collects social stimulations" (p. 72). The individual is largely lost in the group, he is not self-conscious, but regards his passions as *given*, or as his relation to the gods, who are the embodiment of the fundamental interests and ideals of the group. To interpret this attitude, "we must strip ourselves of our modern habits of mind" (p. 70). The scientific comprehension of the meaning of beliefs (which are affective and voluntary attitudes) demands of the student sympathy and imagination. A man without a foundation of vital religious experience in himself can not, then, construct a science or philosophy of religion. Knowledge that from start to finish abstracts from the concrete and personal is inadequate in this field; what is required is a knowledge that,

starting with images, emotions and impulses as data, retains these in part in the final synthesis. A man's relation to his gods is dramatic, therefore the need in the student of religious sympathy, which is appropriately compared to dramatic appreciation. Three stages may be traced that are common to the two attitudes: (a) sympathetic imitation, (b) critical reaction and (c) resulting mood or emotional disposition.

Among mystical ideals purporting quite to transcend the personal and social levels, some account is given of beliefs of the Iroquois, Africans, Greeks and Hindus. The magic power of the *word* is dwelt upon if not clearly interpreted. The importance of mysticism is found in its attempt to fix a single principle and standard of values, but the relations of such a universal to the particular facts and values of experience (whether transcendent or immanent, organizing and representative, and how so) are not made clear: that is, the question of the manner of the concrete use of the principle, especially if it be an empty and absolute universal, is hardly suggested.

The features of the complete religion are indicated. It will contain all three levels of value: (1) the personal, (2) the social and (3) the metaphysical. There are three great types of religion on the metaphysical level: (a) ascetic mysticism, exemplified by Vedantism, (b) social mysticism, as in Buddhism, and (c) historic mysticism, Christianity. In (a) the end is an abstract ecstasy excluding the two lower levels; in (b), while ecstasy is reached by absorption, it is still to have a function in the social world; in (c) only are all three levels of value present in essential unity.

The book is, of course, a suggestive sketch of a point of view and method for solving religious problems rather than itself an embodiment of such a method or system. For the latter its data are too scant and its touch too light. Moreover, the employment of logical, ethical and metaphysical categories is so frequent and so apparently *a priori* as almost to belie the author's initial appeal to the standards of inductive inquiry. There is present also a lack of clearness and incisiveness in the concepts which are described as involved in religious experience, and in their relations to each other, contradictory or otherwise, *e. g.*, the universal and particular, judgment and feeling. The reader feels himself sometimes on shifting sand when he looks to deal with a clearly developed dialectic. Two of the most valuable suggestions the book contains are (1) its attempt to determine the relative value of religious experience by the types of judgment clearly implied in the experience and (2) its emphasis on the need of a sympathetic and dramatic interpretation of religious experience.

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Das Weltproblem von positivistischem Standpunkte aus. JOSEPH PETZOLDT. Leipzig: B. G. Teubner. 1906. Pp. x+152.

This little volume is a very interesting contribution to the history of positivism. The general point of view of the book is that with which

students of Avenarius have already been made familiar. It is another attempt to solve *Das Weltproblem* by an appeal to the autocratic and final evidence of immediate experience. The greater part of the volume is taken up with a sketch of the history of philosophy, in which the author passes in review the familiar landmarks in the history of thought from Thales to Kant. There is one criticism which the author makes upon every previous system he examines. The disparagement of the world of our immediate experience as a realm of "mere appearance," and the exaltation of a second, purely imaginary world to the rank of reality, this, Dr. Petzoldt contends, is the "miserable mistake" that philosophers have made from the time of the earliest Greek sages to the present day. It is the "original sin" which is responsible for the fall of philosophic man. The search for a permanent and ultimate material underlying all things as their substance is the pursuit of an *ignis fatuus*. It stands on the same level with the search for the philosopher's stone or for perpetual motion. This is what the author calls the *empirical fallacy* of the earlier Greek physiologers, a fallacy which has been slavishly perpetuated for twenty-five centuries. And again, the search for an absolute in thought, a unifying principle for the manifold of consciousness, is what Petzoldt calls the *logical fallacy* of the earlier Greek metaphysicians. This fallacy, too, has been perpetuated, even more persistently and slavishly. Metaphysics and epistemology are merely later-day refinements of the mythological tendencies of the childhood of our race.

Petzoldt frankly confesses that in his system he has once more returned to a point of view closely resembling that of the naïve realism of the plain man. The resemblance is very close at two important points. In the immediate experience of the object, without any further transforming or transcending step, we have reality. Our immediate experiences of the object are not merely projections of subjective sensation complexes out beyond which reality is conceived as lying. These immediate experiences of ours are themselves ultimate reality.

Following Avenarius, Schuppe and Mach, he says there is "no world in itself, only a world for us." He explains at great length that he means by this assertion something quite different from subjective idealism, Berkeleianism, or Kantian idealism. In all these systems there is a tacit or overt recognition of that which transcends our immediate experience. The "*esse is percipi*" points always to something beyond subjective experience, for Berkeley held that sense perception is the language of God. Petzoldt insists that Berkeley and the later idealists have "erred in thinking that they could annihilate matter and still keep the correlative concept of mind." If everything is immaterial we can no longer point to anything that is material, and therefore the immaterial in Berkeley's system loses its meaning, for it has significance only in correlation with the material. Mind and matter stand in a necessary correlation. The idea needs the object, quite as much as the object needs the idea.

Every one will admit that this is a proper criticism upon Berkeley's

immaterialism. Berkeley was, in the end, a sensationalist and not a thoroughgoing idealist. But it must be pointed out as a counter criticism upon Petzoldt that his fundamental position is also the starting-point for many systems of transcendental idealism. One need not read far in current idealistic systems to find other thinkers starting from this same doctrine of the inseparable correlation of the psychical and the physical world. But while in the positivism of Petzoldt these inseparably correlated worlds are regarded as the ultimate and only reality, representative idealism insists that we are here still in the realm of appearance. Reality has suffered a transformation in order to manifest this correlation. Ultimate reality lies deeper than either of these two realms. It is the world of undifferentiated values that transcends the contrast between the psychical and the physical world.

Dr. Petzoldt shows his close affiliation with pragmatism in many passages. "Thought is really a biological function. That which can not be logically maintained is also that which biologically has been left behind." This is the crucial question which Petzoldt asks of every philosophy that sets up an absolute over against the relative: "How is this world of appearances, which after all is here and furthermore is under the reign of law, related to that real world?"

Idealists will say that Petzoldt's attempt to make experience self-explanatory is open to precisely the same objections that have always been made to empiricism in whatever form it has manifested itself in the history of philosophy; but they will all welcome his little volume as one of the most important and original contributions to the present pragmatic movement.

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Kinesthetic and Organic Sensations: Their Rôle in the Reactions of the White Rat to the Maze. JOHN B. WATSON. *Psychological Review*, Monograph Supplements, Volume 8, No. 2 (Whole No. 33), May, 1907. Pp. vi+100.

This paper gives an account of some admirably exact and well-controlled experimental work. In reviewing the content of the monograph I shall first call attention to certain matters of form which seem to me worthy of consideration, and I shall then give a résumé of the important results which the author has presented.

The style of the paper, unfortunately, has many weaknesses. Among them those which must imperatively demand adverse criticism are ambiguity, inappropriate words, and the use of colloquial and slang expressions. That these statements may have the support of instances in point, I quote from the monograph the following examples of the defects which have just been mentioned. On pages 57-58 we read, with extreme discomfort if not with uncertainty regarding the author's meaning, "These results from the experiments on the defective rats confirm those obtained by Dr. Carr and ourselves upon the normal trained rats

with the maze in darkness." And again, on page 76, "Showing the average time of two female rats whose vibrissæ had been removed in learning the maze." Marked, as it occurs in the sentence "His behavior was so marked that it deserves mention" (p. 17), seems to me quite inappropriate. And the use of the word graph in "A separate and detailed discussion of this table and its accompanying graph is not necessary" (p. 19) is new, if not undesirable. But far worse, in my opinion, than the ambiguities and ill-fitting words of the paper are the colloquial and slang expressions which the author has chosen to use. No one who is not at home in the English language could fairly be expected to understand the meaning of "the monkey isn't 'in it'"; "all of them are in poor shape"; "as long as the track is straightaway, there is 'full steam ahead'"; "they could do it 'hands down'"; "every rat 'kited' by"; and a number of similar expressions. Surely every scientist is under obligation to write purely as well as precisely. I freely admit that Dr. Watson has used, in many of the cases cited, words or phrases which would be significant for the average American reader, but at the same time I am convinced that the present status of the expressions does not justify their use in scientific literature.

The purpose of the investigation which has been carried on by Dr. Watson and several of his students was to discover whether a maze or labyrinth habit may be acquired by the white rat after it has been deprived of sight, smell, hearing, and the cutaneous senses. The method employed was the removal of the sense organ or its functional impairment by means of an operation, and the subsequent testing of the defective animals in a Hampton Court maze. The records of learning which were made by (1) blind rats, (2) anosmic rats, (3) partially deaf rats, (4) vibrissæless rats, (5) rats which, because of changes in the environmental conditions, were unable to depend upon temperature or tactual sense data, and (6) finally, a rat which was blind, anosmic, and vibrissæless, were compared with those of normal rats. In all except the sixth (6) of the conditions enumerated above, more than one individual was tested. Both the operations and the experiments were carried on with highly intelligent and honest care and insight. Measurement of the process of learning the maze was made, in all cases, in terms of the time which was consumed by the animal in passing from entrance to exit. Undoubtedly the experiments would have been increased in value had Dr. Watson devised a method of recording the number of errors as well as the time of each test. Personally I am of the opinion that it is far better to study the behavior and psychic processes of an animal by changing external conditions than by rendering the animal itself abnormal, pathological, or defective. But for the experiments under discussion I may say that they seem to me as free from objections as they well could be, inasmuch as the vivisectional method was employed.

The importance of the results which this paper presents will be appreciated by students of animal behavior as well as by psychologists. The chief conclusions which have been formulated by the author himself may

be briefly stated. "Rats trained to the maze in the light can run it perfectly in the dark; normal rats can learn the maze as readily in the dark as in the light; totally blind rats can learn the maze as readily as normal rats; rats trained to the maze in the light suffer little loss in the accuracy of their adjustments to the maze if deprived of vision" (p. 91). Similar statements hold with respect to smell, and the cutaneous senses. I may quote the author's words concerning the latter. "Cutaneous sensations can not, in our opinion, serve as the basis for making the correct turns in the maze, for the following reasons: (1) the vibrissæ, in all probability the most sensitive part of the cutaneous mechanism, can be dispensed with absolutely without disturbing the reactions of the animal, provided sufficient time is given him to 'wear off' the unpleasant 'affective tone' conditioned by their removal; (2) the experiments with the cooled and heated copper plates show that the slight differences in temperature existing in the maze have no influence upon the selection of a given turn; (3) the direction of the air currents in the maze likewise is without effect upon the selection of the turns; (4) after the application of a local anesthetic to the soles of the feet and to the bare portions of the snout of the rat, his reactions remain unchanged" (p. 91).

Judging from their reactions to food soaked in solutions of cane sugar, tartaric acid, salt or hydrochloric quinine, white rats are far less sensitive to these gustatory stimuli than are human beings. Even a 5 per cent. solution of quinine was not strong enough to cause uniform refusal of the food.

Finally, it should be noted that the rats were confused, and made numerous errors in attempting to follow the path of the maze, after it had been rotated 90° or 180° from the position in which they had been trained to follow the path. Apparently the animals are guided by data of which we have no knowledge through our own experience. Dr. Watson himself believes that "kinesthetic sensations coupled with the organic probably, and possibly with the static," are the guiding data for the white rat in the maze. It may not be inappropriate to suggest that the animal might be able to follow the correct path in the absence of all sensations.

"Kinesthetic and Organic Sensations" is a contribution to comparative psychology which is as valuable for the problems and methods of study which it suggests as for the results which it presents. It marks a noteworthy advance in our knowledge of the conditions of learning in one of the mammals.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. July, 1907. *L'ordre des sciences* (pp. 1-21): F. LE DANTEC. — From the nature of human development,

psychology and logic stand first as means of establishing other sciences. Then follow the exact sciences and, lastly, biology, which is the application of these to living beings. *Une expérience cruciale en graphologie* (pp. 22-40): A. BINET.—An attempt to prove the possibility of judging intelligence from handwriting. *La conscience sociale; catégories logiques* (pp. 41-64): A. CHIDE.—Social groups are controlled by a logical mechanism of which the chief category is personality, the power of unification. *Le mysticisme dans l'esthétique musulmane* (pp. 65-72): PROBST-BIRABEN.—Moslem decorative art, as exhibited in Arabic countries, is the philosophic art *par excellence*. Geometrical designs are used to restrain other impressions by centralizing the attention, to isolate the object of meditation by breaking its associates with the real world, and then to arouse the immense and silent feeling of ecstasy. *Revue critique: L'évolution créatrice d'après H. Bergson*: G. RAGEOT. *Analyses et comptes rendus*: H. JOACHIM, *The Nature of Truth*: H. ROBOT. Eisler, *Einführung in die Erkenntnisstheorie*: J. SEGOND. Prezzolini, *L'arte di persuadere*: L. ARRÉAT. Münsterberg, *Harvard Psychological Studies*: B. BOURDON. Mach, *Space and Geometry in the Light of Physiological, Psychological and Physical Inquiry*: B. BOURDON. Th. Lipps, *Psychologische Untersuchungen*: L. POITEVIN. Morselli, *Morale*: J. SEGOND. De Farias Brito, *A verdade como regra das acções*: J. PÉRÈS. *Revue des périodiques étrangers*.

Campbell, Percy A. *A Non-Euclidean Theory of Matter and Electricity*. Cambridge: Geo. H. Kent. 1907. Pp. 44. \$2.75.

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Jordan, David Starr, and Kellogg, Vernon Lyman. *Evolution and Animal Life*. New York: D. Appleton & Co. \$2.50 net.

Stumpf, C. *Zur Einteilung der Wissenschaften*. Berlin: George Reimer. 1907. Pp. 93.

NOTES AND NEWS

THE Philosophical Union, of the University of California, announces as the subject of its nineteenth annual program "The Finality of the Christian Religion." The discussion of the year's subject will be based

upon the book of the same title by George Burman Foster, professor of the philosophy of religion in the University of Chicago. To quote from the bulletin issued by the Union: "For the past two years the Union has been gradually approaching the problem of the meaning and value of the Christian belief. In order to make its discussions the more comprehensive, it entered first, in 1905-06, upon a critical preliminary study of the philosophy of religion, using as its guide Principal Caird's 'Introduction to the Philosophy of Religion.' In 1906-07 this general consideration of the problem was succeeded by a more specific and searching study of certain of the vital issues in religious belief. During that year Dr. McTaggart's 'Some Dogmas of Religion' was the basis of the discussion. Finally, after the two years of introductory study, the time has been judged ripe for attacking the problem of central interest. Professor Foster's book is of peculiar value to this end." The introductory paper was read on Friday evening, September 27, by Charles Henry Rieber, associate professor of logic in the University of California, on the subject "The Modern Question as to the Finality of the Christian Religion." The program of future meetings is as follows: October 25, The Growth of Authority-Religion; November 22, The Dissolution of Authority-Religion; December 13, The Changed View of the World and of Life; January 31, The Naturalistic and the Religious View of the World; February 28, The Essence of the Christian Religion: The Problem of Method; March 27, The Essence of the Christian Religion: Sources of the Life of Jesus; April 24, The Essence of the Christian Religion: Jesus; May 8, The Finality of the Christian Religion.

DR. JAMES ADAM, of Cambridge University, died on August 30. He was known for his editions of the "Republic," the "Protagoras," the "Euthyphro," the "Apology," and the "Crito" of Plato, to which may be added "The Nuptial Number of Plato," "The Educational Value of Classics," texts to illustrate post-Aristotelian philosophy, and his Gifford lectures on religion and Greek philosophy, soon to be published. Dr. Adam was born in Aberdeenshire in 1860, studied at the University of Aberdeen, went to Gonville and Caius College, and was appointed fellow and lecturer at Emmanuel College. He was senior tutor at the time of his death.

DR. DANIEL E. STARCH, formerly instructor in psychology at Iowa University, has accepted an appointment as instructor in experimental psychology at Wellesley College. Dr. Starch is working, also, in the Harvard psychological laboratory.

THE Silliman lectures by Professor William Bateson will be given in the Peabody Museum at Yale University on October 8 and the following days. The subject of the course is "The Problem of Genetics."

PROFESSOR OTTO PFLEIDERER, of the University of Berlin, began a series of six lectures in German on "The German Philosophy of Religion," at Harvard University, on September 30.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE PHYSIOLOGICAL ARGUMENT AGAINST REALISM

THE chief argument against realism is that which has lately been called the physiological argument. It is based upon the generally recognized fact that our sensations come to us through the mediation of our sense organs. Without proper anatomical equipment and its proper physiological functioning there would be no sensations. Sensations are thus variables, dependent on the variations of physiological processes. Hence, it is argued, the qualities present in sensation can not be qualities of independent objects, but must be merely mental in their nature. As Locke puts it, they are ideas produced in us; they "are in truth nothing in the objects themselves," or rather "there is nothing like our ideas existing in the bodies themselves. They are in the bodies, we denominate from them, only a power to produce those sensations in us."¹

Now it is probable that the mere fact that we are aware of sense qualities only when certain physiological processes are going on would never have led any one to suppose that these qualities do not belong to independent objects. If we always got the same sensations from the same object no matter what our state of body or our moods might be, and if we had reason to suppose that these sensations are exactly similar to those that other persons experience, the fact that these sensations are mediated by physiological processes would perhaps never have aroused any suspicion as to the subjectivity of the qualities sensed. But such is not the case. Only a little examination of our experience is necessary to show that sometimes "the same body which appears cold to one hand seems warm to another," as Berkeley puts it. "Again, it is proved that sweetness is not really in the sapid thing, because the thing remaining unaltered the sweetness is changed into bitter, as in case of a fever or otherwise vitiated palate."²

¹ "Essay concerning Human Understanding," Book II., Chapter VIII., §§ 14, 15. Of course Locke limits this statement to what he calls "secondary qualities."

² "Treatise concerning the Principles of Human Knowledge," § 14.

Now if we can sense such different qualities in one and the same object at the same time, or at different times when we have no reason to think that the object itself has changed in the meanwhile, it is obvious that we have to suppose that all these seemingly incompatible qualities are united in the object, or else to suppose that sometimes at least our senses falsify the qualities of objects which they purport to give. The former alternative is unpalatable to us because we are prone to think that reality must not be self-contradictory. If the object really has color, it must choose which color it is to have in any part of it at any time. It must not have all the colors of the rainbow all over it all the time. If this were possible, then there is no reason why every object should not have every quality, every size, every speed of motion, and so on. Our senses would be sieves, which would each let only one quality through at any time from any one part of the object into the experience of any single person. Such a theory would be tenable if one cared to say that the law of contradiction applies not to real objects, but only to so much of the real objects as we can experience at any one time. The law would thus be the law of the sieve and of what in consequence is sifted through, but not the law of what lies above the sieve. But such an interpretation of the law of contradiction is repugnant to common sense. We tend to apply the law to reality as a whole, as well as to those aspects of reality which we can at any time perceive.

Hence the only resort is to maintain that the senses are deceptive. But if they deceive us, how can we know that they do not always deceive us? *Falsus in uno, falsus in omnibus* is a maxim we apply to them, and we get thus the doctrine of the entirely subjective character of our sensations.

Having thus obtained the doctrine, we proceed to explain the falsification of the senses by the fact that our sensations are dependent upon physiological processes—a fact which, as I observed above, would probably never have awakened doubt touching the objective character of sense qualities if that fact had stood alone. This makes it advisable to examine the physiological argument by itself, and thus to see whether that argument by itself has any force against realism.

As we have seen, the physiological argument starts with the fact of the correlation of our experience with our physiological processes. But there is another fact in our experience that is equally indubitable, and that fact is that we perceive objects which, until we begin to get sophisticated, are regarded as real and independent of our perceiving. Unless we keep in touch with this naïve experience in which there are real and independent objects presented, we can have

no psychophysical correlation—no correlation between objects perceived, on the one hand, and real brain events, on the other. If the objects perceived are reduced to merely subjective processes, then the brain events upon which, according to the law of psychophysical correlation, they depend, must in consistency be interpreted as merely subjective processes also. For, of course, we have no better evidence of the existence of brain events than we have of other “external” objects.³ The fact is that we know the one in exactly the same way as we know the other.

But suppose that we grant this, and yet try to take away the realistic implications involved in the admission by saying that the object which we see and the nerve and brain which mediate the seeing are all subjective, all ideal. Does not this put idealism on a better footing? I think not. The processes of nerve and brain have the disadvantage of not existing as objects of consciousness every time that we have perceptions through their mediation. If we were always conscious, first of brain event, and then of a perception of some “external” object dependent on that event, we probably could, if we pleased, state the fact of psychophysical correlation as a fact of constant sequence among actually present subjective processes, without prejudice to the law of correlation. But perceptions have a way of appearing without the previous appearance of their corresponding brain events. Hence if we are to accept the law of correlation as valid, the brain events must be admitted to be real *without being present in consciousness*. Thus the law of correlation may not be interpreted in such a way as to derealize the unperceived physiological processes. Either that law is true and the brain events corresponding to perceptions are real though not perceived, or else the brain events are not real and then the law is not true. To start with the reality of brain events, and on this reality to build up a theory which denies this reality, is to play fast and loose with logic. We may, therefore, say that idealism can not without manifest contradiction build on the law of correlation a theory which involves the non-existence of actual brain events corresponding to perceptions; for the law of correlation is a true law only if there are actual brain events, unperceived, corresponding to perceptions of “external” things.

Professor Strong has attempted to meet this difficulty which confronts the idealistic theory by substituting “possible perceptions” of the brain events for the actual brain events which realism postulates. The result is that before (or perhaps along with, or even a

³ See Professor Fullerton’s admirably lucid chapter on “The Metaphysics of the ‘Telephone Exchange’” in his “System of Metaphysics,” p. 342 ff.

little after) every perception of an "external" object there is placed a "possible perception" of a brain event. In place of a real correlation between two real things, there is thus put a correlation between a figment and a reality. This reminds me of an invitation I once received to join a party of little tots in a journey to the moon. I pointed out that I had no vehicle for the purpose. I was told that my chair would do. I then pleaded that I did not find myself moving in the desired direction. I was told that I could play that I was moving. Professor Strong *plays* that there is a possible perception of a brain event corresponding to actual perceptions of trees and stars.

But Professor Strong would perhaps think that this is not quite fair. He would say that the perception of the brain event is *really* possible. I am afraid, however, that the word "possible" is rather confusing. Under other conditions than those now prevailing when I see a tree, it might be possible to get a perception of a brain event that was occurring in my own cranium, but the *actual* perception of the complex brain event corresponding to my present entire experience would alter this experience very considerably. Hence the "possible" perception on which the "real" present perception depends is *impossible* under just the conditions under which the real perception is possible. We might as well, therefore, say that every "external" perception is preceded by what, under the conditions under which it appears, is an impossible perception of a brain event making that "external" perception possible! This certainly explains the "external" perception and maintains the law of psychophysical correlation very beautifully.

Anything is possible when certain conditions for its actuality are given and the remaining conditions are ignored or are unknown. Thus when I have thrown dice and still hold the cup over the dice, I may say it is possible that I have thrown double-six. The assertion of such a possibility is justified only on the basis of certain actual facts which are known; that is, on the basis of a reality of which we know something and of which we do not know everything. *Possibility presupposes reality* and is a category which we use when we assert our knowledge of certain aspects of this reality and either ignore or are ignorant of the remaining aspects. Possibility is itself possible only because of our ignorance. Now to take possibility of perception as the *meaning of reality*, rather than to make the possibility of perception depend on a reality which might be perceived if the conditions were favorable, and to do this merely that one may maintain an idealistic theory, is as violent and preposterous a procedure as the bloodless annals of philosophy have ever recorded,

and its violent character is not abated by the fact that there is historical precedent for it.

But does not the fact that the object of vision arises on condition of certain processes in the brain make the object of vision in some sense less real than the brain which conditions it? How can the object be prior to the process in the brain so as to initiate the process and also subsequent to the process as its result? Can the seen tree be the same tree as that which causes the physiological process on which the seeing of the tree depends? Is not this to make the thing the cause of its own cause? It is—if we assume at the outset that the thing perceived is merely a “state of consciousness,” which of course can not arise till there is a consciousness of which it is the state. But if we distinguish between *sensum* and *sentire* and *sensibile*,⁴ then the difficulty vanishes. The *sentire* may be the effect of the physiological process, and yet the *sensum* may be the same as the *sensibile* which initiated the physiological process on which the *sentire* depends. Consciousness arises as the correlate of physiological functioning, and when it arises it does not produce its object. What object shall be present to it depends on the total situation within which the awareness occurs. If the situation contains, as a part of its factors, a tree acting through light waves on the retina, the optic nerve, and the brain, then why may not the tree rather than something else be the object of the awareness that arises in correlation with the brain activities induced? We have no right to determine *a priori* what under any given conditions shall be the object of awareness that arises under those conditions, any more than we have a right to determine *a priori* what shall be the effect of reducing the temperature of water to zero centigrade. We have to accept facts as we find them, and this humiliating prescription holds good as well in epistemology as in physics.

But it is argued that we are not obliged to accept contradictions, and that there is a contradiction in terms when it is stated that we can directly see the tree which causes the disturbances in the brain, on which our vision depends. There are too many things *lying between* the tree and the vision to make it possible for the vision to be *immediate*. We must, therefore, examine this contention. But first let me try to state the facts in the case under con-

⁴ See my recent article, “Prolegomena to a Tentative Realism,” in this JOURNAL, Vol. IV., p. 449. My attention has recently been called to the fact that Professor Montague’s article on “Current Misconceptions of Realism,” which appeared in this JOURNAL, Vol. IV., p. 100, had anticipated mine on several points. I should have noted this fact in my previous article, for I had read Professor Montague’s paper; but I did not have it in mind when I was writing.

sideration in such a way that no contradiction seems to result, and then we shall be in a position to see the fallacy of those who try to make out a contradiction where no contradiction is.

The law of psychophysical correlation can best be stated in mathematical terms, using the word "function" in a mathematical sense. A "function" in mathematics, as every one knows, is a quantity that varies as some other quantity varies. Let us now take a number of functional equations related in a peculiar way: $A=f(B)$, $B=f(C)$, $C=f(D)$, $D=f(E)$, $E=f(F)$; therefore $A=f(F)$.

This is a series of equations which tells us the way in which A varies, ending with the statement that it varies with F . But it does not tell us *what* A is. A may be anything and F may be anything so far as the formula goes. Anything else than the fact that A varies with B , C , D , E , and F must be learned from some other source than the formula. But when we apply the formula to facts of experience which the formula fits, the final equation, $A=f(F)$, holds good.

Now when this functional formula is applied to the case before us, F is the *sensibile*, say a tree, separated from the *sentire* by a greater or less interval of time. The *sentire*, or awareness, does not find its expression in the formula, but the *sensum* does; the *sensum* is the A of the formula, and for the realist this *sensum* is the same as the *sensibile*; it is the *sensibile* in a different relation from that in which it stands when it is regarded as the initiator of the brain processes. It is the *sensibile* as object of the *sentire*. The *sensibile*, as initiator of the brain processes, is the independent variable or the "constant" of the equation, and its variations condition the variations of E (light waves), D (retinal stimulation), C (excitation of the optic nerve), B (cortical disturbance, or "brain event"), and A (*sensum*, the tree as object of awareness). The tree, as reality in the order of nature, acts on other objects in that order, viz., light waves, retina, optic nerve and brain, and then it appears in a new relation, as an object of awareness. In other words, a thing, in the variations it produces on light waves and bodily organism, is the condition of the variations which this same thing undergoes in another relation, namely, as object of an awareness which is correlated with a certain process in that organism. There is surely no contradiction in such an application of the functional formula.

One word is necessary on the above-indicated unvaryingness of the awareness. Awareness is the name of an abstracted feature of a concrete fact, namely, the fact of experience, or awareness-of-objects. *This concrete fact* varies, but when we examine the nature of its vari-

ations, we find that what changes is the complex of objects, not the awareness. We have here something parallel to the change that is undergone in an object whose size alters while its color remains the same. The concrete object changes, but not its abstract characteristic of color. So experience, the concrete fact under consideration, changes, but when we look closely into its changes, we find that the *objects* of experience change, but the awareness remains the same in all the changes of experience. At one time there is awareness of one set of objects, at another time there is awareness of another set. Now there are many objects, now there are fewer objects: the "field of awareness," *i. e.*, the range of objects, expands and contracts, just as an object expands and contracts when its size varies. But just as this enlargement and contraction do not make the color of the object change, so the expansion and diminution of the field of experience do not make the awareness change.

Is consciousness, therefore, a function of the bodily organism? Yes and no. Yes, in that, so far as we can judge from our experience, there is consciousness only when certain brain states occur. The *fact* of consciousness is a "function" of the bodily organism in the sense that this fact does not exist unless certain changes take place in the brain, and it exists when these changes do occur. But when changes of a certain kind thus occur, changes of the brain *within the limits of this kind* do not occasion changes in consciousness. The only changes that consciousness undergoes, if we may speak of them as changes of consciousness, are changes from existence into non-existence, and *vice versa*. The question with which this paragraph began must, however, be answered negatively, if "function" be taken in the stricter sense; for, as we have seen, many changes are possible in the brain which do not in any way result in a change of consciousness, in the only sense in which there is any change of consciousness. That is to say, many changes in the brain processes leave consciousness unchanged, while the *objects* of consciousness change. It is for this reason that in the functional formula given above the *A* is not to be interpreted as consciousness, but as object of consciousness.

Now our functional formula, applied to the relation of the real thing to the perceived thing, still leaves a difficulty on our hands. How can what no longer exists *in re* still exist *in sensu*, if it be the same thing in either case? This question is forced on us by the fact that our perception is always at least slightly belated. As Professor Strong puts it, "The time needed for light rays to pass from the object to the eye and call forth the organic process to which perception corresponds has this result, that we perceive a slightly earlier

state of the object than that which coexists with the perception."⁵ In the case of the vision of a star, "The starlight I see left the star years and years ago."⁵ The star that I see, therefore, must exist in the same state at two different times many years apart, if the star I see is the same as the real star in the order of nature.

Now the question how that which exists *in re* can also exist subsequently *in sensu* can be answered differently according to the different possible meanings to the question. If the question asks for the *process* by which the past thing becomes present object, the answer is given when our formula is interpreted in terms of our present problem. The past reality can be seen now and not before, because the intermediate functions are temporal functions and may require a long time to run their course.

But the question may mean, How can you escape the contradiction of saying that the same object existed long ago *in re* and now exists *in sensu*? How can numerically the same state of the object exist at two different times? I answer that contradiction exists only when "diversities are attached to one unyielding point assumed, tacitly or expressly, to be incapable of internal diversity or external complement."⁶ The star as an object in the order of nature is identically the same star as that which is the object of consciousness, but the same star *in different relations*, and what is true of it in one relation may not be true of it in another relation, even though in both relations its position in time be involved. If the star were a vacuous identity, "incapable of internal diversity or external complement," of course this would be impossible. But as it is a thing that can stand in different relations, there is no contradiction. It is sufficient for the philosopher to state the facts in such a way that no contradiction results. He is not called on to explain everything he finds, except in so far as explanation consists in a statement of general principles. The principles themselves do not have to be explained. The general principle, in our case, is that the special time relations of things to each other differ according as these things are taken in their natural order or in their order as objects of immediate consciousness. So long as the two orders are distinguished, no contradiction is involved in considering the special time relations as different in the two orders.

⁵ This JOURNAL, Vol. I., p. 521. It was Professor Montague who brought Professor Strong to consider the disparity between the time of perception and the time of object perceived. But Professor Montague uses this time-disparity as an argument against what he calls a "telepathic theory of perception." I conceive it to be a proof of the theory, although I do not like the name with which he dubs it.

⁶ Bradley, "Appearance and Reality," pp. 566, 567.

Every theory which admits the reality of time, whether as merely subjective in the Kantian sense, or as objective in the popular sense, must admit that the real time of an occurrence may differ from its apparent time. It is a principle without which we can not harmonize our experiences. The realism which I am studying does not make the difficulty; it solves the difficulty by pointing to a difference of relation which makes the thought of such a difference in time logically consistent, without making necessary the duplication of the object which thus has different relations. So far as I can see, therefore, we may consistently maintain that it is the same star which I now see and which existed perhaps a hundred years ago. It existed *in rerum natura* when I was not aware of it, and my awareness of it arises after a long interval. When this awareness does arise, it does not manufacture a counterfeit presentment of the obsolete star; neither does it call back to renewed life in the order of nature the extinct orb. The star, gone in the order of nature never to return *in that order*, returns *in another order*, the order of immediate objects of consciousness. In that order it takes the same date as that occupied by objects which in the natural order are long subsequent to the star as a dated fact in the natural order. Let me illustrate this difference of orders by referring to the fact that Wilhelm II as head of the German Empire far outranks Professor Harnack, who is merely a professor in a state university, and is thus separated from Wilhelm by many intervening principalities and powers. But in the order of historical scientific critics of the Apostles' Creed, Professor Harnack is perhaps *facile princeps*, and Wilhelm is faintly discernible in the lower ranks, among the unnamed subjects of his imperial realm. The first is last and the last is first. So, likewise, the same object can be differently disposed in time in the two orders of nature and of immediate presence to consciousness; for there is a natural order and there is a spiritual order.

But the question, How can a *past* reality be now *present* as an object of consciousness? may appear to have still another meaning. It may mean, How can consciousness be immediately aware of temporal things which do not belong to its own time?

Here emphasis may be laid on "immediately," and the question may mean, How can we be immediately aware of what is not immediately present? The answer is that "immediately" is here used in two senses. The first "immediately" brings out the fact that the object is actually an object of consciousness, standing *in propria persona* before consciousness, neither is there any daysman betwixt them, that might lay his hand on them both and bring them to-

gether by external arbitration. The second "immediately" is temporal: the object in the state in which it is now perceived belongs, as an object having a fixed place in the time order of nature, to the past, and there is an interval between the place it occupies in that order and the place that the consciousness of it occupies. The star may be an immediately present object of consciousness, but an object which we may be aware of as having existed "out of consciousness" long before it became an object of consciousness—nay, we may even have reasons for supposing that it no longer exists "out of consciousness."

There may be another ambiguity in the term "immediately present," which is responsible for the difficulty in accepting the immediate presence in consciousness of an object, like a star, which we have reasons for believing existed long before our consciousness became aware of it. To be "immediately present" to consciousness may mean to be present without having been brought to consciousness by any intermediating processes, or it may mean to be present in the unique way in which my hand is present in consciousness when I open my eyes and look at it. When I shut my eyes, my hand as a visible object is present in consciousness through a representative image; it is not immediately present, but representatively so. When I open my eyes and look at the hand, it is immediately present. But in either case there are physiological processes that mediate the presence of the object; in the one case as an immediate object, in the other case as a represented object. Thus an object can be both immediately present in consciousness and mediatedly so, just as a person may be immediately present in a police station and yet have been brought there by certain mediating agencies. This fact, however, is often overlooked in arguments against realism. It is assumed that the mere fact that no object ever presents itself to consciousness without the intermediation of physiological processes renders impossible the immediate presence of any object to consciousness.

But the question, How can a past reality be now present as an object in consciousness? may be asked with still another meaning, and therefore with still another required answer. It may mean, *Why* should there be an awareness now of objects that in time existed before the awareness? I give it up. But I will return the riddle. *Why* should there be *redness, roughness, rats*? Given a world in which such things are, we can laboriously trace the processes by which they came to be, arising in sequence on other things that have been. But if nothing is given, and then I am asked to explain how or why these things are brought into existence, I prefer to

pass the question on to some orthodox professor of systematic theology.

All I know about the matter is that there is such an awareness and that we must accept the fact that *we constantly have immediate awareness of what in the natural order of timed things is not dated in the immediate present*. Immediate presence in consciousness and existence in the order of nature at the same time that consciousness exists are two different facts that we have to distinguish, just as we distinguish any other different facts. It is an old saying that most of the difficulties in philosophy are due to ambiguities in the words we employ in our philosophical reasoning. This is a case in which that saying applies. When we make the proper distinctions we find that the alleged contradictions of realism which we have been considering vanish; there is left only the existence of ultimate facts to be accepted or not as the evidence for them decides. There is no logical absurdity in the realistic doctrine on this point.⁷

If this has been made clear, we are in a position to see that the physiological argument which is directed against the realist returns as a boomerang against the idealist. Professor Strong, one of the present protagonists of antirealistic philosophy, admits, as we have seen above, that if we accept the facts of physics and physiology, we must admit that "we perceive a slightly earlier state of the object than that which coexists with the perception." This admission, instead of involving the *reductio ad absurdum* of realism, turns out to be a means of reducing idealism, at least of Professor Strong's kind, to absurdity. For we must remember that Professor Strong says that he has never been able to distinguish "the perception of a tridimensional book from the book itself."⁸ If he can not make this distinction, how in the world can he speak of perceiving a slightly earlier state of the *object* than that which coexists with the *perception*? Here the object that is perceived is surely distinguished from the perception and is made to antedate the perception. The fact is that the physiological argument *demand*s that the object perceived should exist before the perception, and therefore that *it should be distinguished from the perception*.

⁷If we had the time here, it would be desirable to take up the various points involved in the distinction between the time order of nature and the time order of objects as immediately present to consciousness. I wish here merely to say that the realism we are studying does not deny the *reality* of the latter time order or of such objects as have a place only in that time order—such objects as images of past realities in the natural order. Everything is real in its own way, whether it exists in the one time order or in the other. Again, realism does not assert that there are *two times, separate from each other*. But this is too much of a problem to be taken up in this article.

⁸ This JOURNAL, Vol. I., p. 547.

Professor Strong may not reply that the object perceived, which exists before the perception of it, is merely a "possible perception" which some Psyche might have had if she had been favorably situated to get it; for he has assured us that "in the endeavor to adjust the facts of experience to one another," you must not "be led to the conclusion that objects are *beyond* that of which you are immediately conscious, without having lost contact in some way with the firm ground of experience from which you set out."⁹ Surely a possible perception is beyond that of which we are immediately conscious; hence the object can not be a possible perception. It is just the perception itself, and yet it precedes the perception itself! No wonder that Professor Strong admits "that there is an apparent antinomy here." The thing that one can not help wondering at is that he should say of the theory which gets him into such an antinomy: "The beauty of the panpsychist theory is that it enables us to clear it up quite completely."⁹ There is more contradiction to the square inch here than Professor Strong has succeeded in showing to exist in the whole reach of realism. Although there is no distinction between perception and object, yet the object is past and the perception is present!

Now if the object which I see, and see immediately, is one that existed before my seeing of it, it follows, in the first place, that there is a distinction between the object and the perception. Hence we find that the physiological argument confirms the analysis I made in my articles "The Stream of Consciousness" and "Prolegomena to a Tentative Realism."¹⁰ There I found that a distinction must be made between consciousness and that of which we are conscious. Here we arrive at the same result: without this distinction all objects must have the time of the experience to which they belong, or of the perceptions of them, and must be tied down to this time. In the second place, since the physiological argument is based on facts that necessitate the priority of objects to the awareness of them, it follows that realism is correct in maintaining that objects are *temporally independent* of the awareness of them. *The argument proves realism, instead of disproving it.*

There is one remark that should be made before this examination of the physiological argument is concluded. We have seen that the realistic view commits one to the acceptance of the principle that in one sense consciousness is functionally dependent on physiological processes. Such a principle, we are told, is "absolutely incomprehensible."¹¹ "Their conjunction would simply have to be accepted

⁹ This JOURNAL, Vol. I., pp. 521-522.

¹⁰ This JOURNAL, Vol. IV., p. 225 ff., and p. 449 ff. ..

¹¹ Strong, "Why the Mind has a Body," p. 153.

as an ultimate fact.'"¹¹ The realist is perfectly willing to accept it as an ultimate fact if thereby he is enabled to accept the other ultimate facts that the idealist seems so desirous of accepting, namely; that what we perceive is the very object itself, that there are various events that functionally mediate the object and the brain event with which consciousness is correlated, and that these events interpose a time interval between the date of the object and the date of the awareness. The realist finds it easier to accept ultimate facts than contradictions and fallacies and jugglings with perceptions which make the same perception now actual and now possible, now present and now past—legerdemain of the "now you have it and now you haven't it" kind. He has to accept ultimate facts sooner or later anyway, and he can not see how an ultimate connection becomes any the less ultimate when it is smuggled into a bag labeled "similarities," wherein he is assured that one can "begin to 'see the effect in the cause.' " That bag seems rather to hide the ultimateness than to remove it.

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ATTENTION FATIGUE AND THE CONCEPT OF INFINITY

IT is the purpose of this paper to suggest a relation between the smothering or diffusion of attention found as one element of intellectual fatigue, immediate or cumulative, and the metaphysical concept of infinity in the sense of the unlimited and unconditioned.

In any concept we may have, of course, either purely word-images or images visual, auditory, kinesthetic, etc., of the object or of the relation or series of objects and relations. Let us call them content-images to distinguish them from word-images and from the secondary representations, visual, auditory, kinesthetic, etc., of word-images. Much of our thinking is carried on in terms of word-images or of the secondary representations of them. As in pure mathematics or in purely formal logic—such as the work of Peano, Schröder or Bertrand Russell—we can manipulate symbols, regardless of the content represented by these symbols, so in much of our ordinary thinking we make large use of merely word-images. But for any except this formal type of reasoning we have to use content-images. Thus if we examine discussions of the metaphysical concept of infinity, as in Spinoza or Kant, we find the use of something more than mere word-images. We find content-images. For instance, in Kant's first antinomy the whole discussion is based on an

attempt to analyze the content-images and to see how it is possible to think them in each case.

Having distinguished between content-images and word-images, and having seen that discussions of infinity involve content-images, let us see what is the nature of the content-images used. If we examine such as are actually used, we invariably find as one element such a form of the images that the attention is inevitably smothered. Let us quote as illustration from answers given to this question, "What images do you discover when you think of such abstract ideas as goodness, law, infinity, beauty, force, cause and effect?"¹ Those referring to the idea of infinity were as follows: "Space in a whirl," "A whirling, whirling ball," "Line extending through the sky," "Infinitely long, white straight line," "Space—blue, fluffy, misty clouds," "Mist-filled, colorless space extending forever and ever," "Space filled with subdued light, something like fog," "Sky at night with stars and milky way, etc." (several used images of sky in various forms), "Waves rolling on the beach," and several mathematical representations like "curve approaching Y-axis," "parabolas," "parallel lines," "circle." If we examine these, we find each of them involves an undifferentiated something as an invariable feature. Space is whirling, whirling so that its different positions are not fixed in attention; the line extends through the sky, long, white, unending, unchanging; the fluffy, misty clouds, the mist-filled, colorless space, the subdued light, all give as an invariable feature the very undifferentiated character which is sure to induce smothering of attention. The same is true of the waves rolling on the beach. That element in the image which represents the infinity is the fact that one wave follows another without change, the undifferentiated character of the process. Further examples could be added: "falling over the edge of the world into space,"² where the undifferentiated character appears in the succession of the imagined positions in the process of falling; the number series³ considered as a process of manipulating digits, although this usually involves mere word-images. Kant in his first antinomy uses as the content-images a series of worlds, a repeated synthesis of parts, empty time and empty space,⁴ in all of

¹ For the use of these answers I am indebted to Mr. W. V. D. Bingham, of the department of psychology, University of Chicago. This question was one of several relative to ideational type submitted to students in introductory psychology at that institution. I have made no attempt at quantitative results except as is involved in the statement that, so far as *any* content-images were found, they all had the element noted.

² Illustration of how a child gets the concept in Baldwin's "Dictionary of Philosophy and Psychology," Vol. I., article on "Infinite and Infinity."

³ *Ibid.*

⁴ Cf. "Critique of Pure Reason," Müller's translation, 2d Ed., pp. 344-347.

which the undifferentiated element is evident. The same is true of any self-representative series, of which form Professor Royce⁵ has made so much. The baking-powder box having on its label a picture of itself and in this picture another picture of itself and so on is an example of such a self-representative series and shows the essential feature of that series to be, not the differences in the pictures, but the unvarying repetition of the series itself.⁶ We find, then, in all the content-images cited, as an invariable element an undifferentiated character which is sure to smother attention.

Having found that this smothering of attention is an invariable element, we turn to inquire if it is not the essential element, if it is not the element by virtue of which these content-concepts are concepts of infinity, if it is not the element which, if lacking, would make the concept not a concept of infinity. We find that just in so far as we do have differentiation we say that we have not the concept of infinity. Thus in trying to form a content-concept of infinite time preceding the present moment, we may jump back over historical and geological periods, alighting momentarily on the thought of pyramid builders, of the first savages to use fire and stone implements, of the time the world was flung off from the hasty pudding of the sun and so on. There is, it is true, differentiation in this concept. There are alighting places for attention, but for that very reason we say that they do not even in combination represent infinity. The very fact that they can be differentiated and held in attention makes us say that they do not represent infinity. The more they can be differentiated, the more easily they can be held in attention, the less adequately do they represent to us infinity. The less differentiated they become, the more nearly they assume that character which shall smother attention, the more nearly we say they approximate the concept we are after. In these content-images cited, then, this smothering of attention is not only an invariable attendant, but also the essential element, that without which the concept would not be a concept of infinity. Since this smothering of attention is an essential element in these concepts, since we can not find any content-concepts in which this is not an essential element—although recognizing the inconclusiveness of this negative part of the argument—we are led to suggest that the concept of infinity is the metaphysical correlate of that which on the psychological side is smothering of attention. This smothering of attention is, of course, itself a symptom of certain molecular conditions of cortical and peripheral cells which we can at present but fragmentarily describe.

⁵ "The World and the Individual," Vol. I., p. 501 ff.

⁶ Cf. for further illustrations "The Infinite New and Old," J. A. Leighton, *Philosophical Review*, September, 1904.

One question may arise. If smothering of attention is the essential element in content-images of infinity, why does not every case of the smothering of attention give the concept of infinity? If we attend long enough to a single element of any image, for instance, the image of a desk-pad, we shall secure smothering of attention, but no concept of infinity. The answer, of course, is that in these latter cases the smothering of attention is one element of the process, but not the essential element. We do not say, in the case of the desk-pad, that the more undifferentiated our image of it becomes, the more nearly smothered our attention is, the nearer we are to a content-image of the desk-pad. But in the case of the concept of infinity we do say just this. The more undifferentiated the image the nearer it comes to being the concept of infinity. In short, the smothering of attention in the concept of infinity is the essential element, in the case of the concept of the desk-pad, an irrelevant attendant circumstance.

We have distinguished between two kinds of concepts, or images used as signs of bundles of experiences, word-images and content-images. We have seen that content-images are necessary for any description or argument, such as is found in the discussions of infinity by Spinoza and Kant. We have found that an invariable element in all content-images of infinity is an undifferentiated character sure to induce smothering of attention. We have pointed out that this smothering of attention is not only an invariable, but also an essential, element in the concept of infinity, and hence we have suggested that attention fatigue is the psychological correlate of the concept of infinity.

From this grow two or three other suggestions. One is relative to mystic states in which oneness with the infinite is such a prominent feature. As Pillsbury⁷ has pointed out in the case of fluctuations of attention to minimal sensory stimuli, cumulative fatigue after a long period of work is likely to extend the periods of smothering of attention in immediate or temporary fatigue. In other words, when the organism is fatigued after prolonged nervous work or excitement we may expect the smothering of attention to be especially easy. In mystic states we find these very conditions of excitement and fatigue which would make the smothering of attention readily inducible. We find those conditions which would make the organism fallow for suggestions of the infinite.

A second suggestion is relative to a psychological interpretation of a well-known metaphysical position. Kant in his treatment of that field in which judgments involving infinity are in order, in his

⁷ *American Journal of Psychology*, 1903, p. 541 ff.

treatment of the realm of things-in-themselves, says that they never can be known, but must be thought.⁸ It is interesting to translate this observation into terms of physiological psychology. The infinite can not be known because knowledge involves the flitting of attention over the different features of any given percept or idea. Any attempt to know the content of the concept of infinity necessarily involves imagery sure to diffuse and smother the attention, and thus make knowledge of it impossible. By an automatic device attention is scattered and the knowing process stopped when turned to consider the concept of infinity. On the other hand, Kant says while it can not be known it must be thought, that is, these states of smothered attention are facts of experience and must be represented by concepts such as those of infinity and things-in-themselves.

The third suggestion is relative to an avenue of approach to questions of the physiological basis of metaphysics. It may be felt that the serious consideration of such questions in the present state of physiological psychology is foolhardy, that the problems of localization of function in the cortex and of the vicarious functioning of certain cortical centers for other cortical centers are at present too unsettled to allow of any such consideration, except, perhaps, as pipe-dreams of a psychologist after his regular day's work is done. But the foregoing study is just such a reaching out after a hint on the physiological processes underlying metaphysical concepts. We have tried to find out one of the psychological elements, namely, attention fatigue, which goes along with one type of metaphysical experience, namely, the concept of infinity. We have tried to reduce part of our problem to terms of attention fatigue. But the problem of the physiological basis of attention fatigue does not seem entirely hopeless to the physiological psychologist.⁹ This problem seems to offer him a handle as that of the physiological basis of a metaphysical concept does not. If we can establish a relation between the concept of infinity and attention fatigue we may be able to use some of the experimental data on the physiological correlates of attention fatigue to help in the larger problem. We recognize, then, that in speaking of this concept in terms of attention fatigue we are speaking in terms of a psychological symptom of a physiological state, of the precise nature of which physiological state we are still largely ignorant. We see, however, that if we establish a relation between the concept of infinity and attention fatigue this relation will not be disturbed

⁸ *Op. cit.*, p. 207 ff.

⁹ *Cf.*, besides the works of Wundt, Münsterberg, Lange and others on fluctuations of attention, W. MacDougal on the "Physiological Factors of the Attention Process," *Mind*, Vols. XXVII, XXVIII.

by further light on the molecular changes underlying attention fatigue. This relation will put us a step nearer discovering the physiological basis of one metaphysical concept.

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REVIEWS AND ABSTRACTS OF LITERATURE

Plant Breeding. Comments on the experiments of Nilsson and Burbank.

HUGO DeVRIES. Chicago and London: The Open Court Publishing Co. Pp. vi + 360.

This work of deVries's is primarily devoted to an exposition of the methods followed by Nilsson and Burbank, but of equal importance and interest is the attention that is given to his theory of evolution and mutations.

The work of Nilsson, which will revolutionize plant breeding and open fields of scientific investigation of fundamental importance, has heretofore been concealed from the public owing to the fact that he has entirely disregarded all educational aims and purely scientific researches. His sole effort has been directed to the amelioration of agricultural crops, but it should be added that his work is based upon the most exact and scientific methods. This report of deVries's will bring amazement when it is learned that in the little Swedish village of Svalöf, opposite Copenhagen in Denmark, results have been obtained and principles have been discovered during the past fifteen years which exceed in importance all the achievements in agricultural history.

This work was started owing to the slow but manifest deterioration of various agricultural crops, which lessened the value of the harvests in an important degree. A few Swedish farmers formed a company in 1886 at Svalöf for the purpose of procuring and testing new foreign varieties of seeds in order to replace the inferior Swedish varieties. Naturally, the German method, which was most widely practised at that time, of improving the quality of the grain, was followed. The practise was to select numerous examples of the best specimens of a particular crop, *i. e.*, make a "multiple selection," and this *élite* stock was sown, and similar selections were again made from it. Year after year the best examples were chosen from the successive crops, and slowly and gradually the qualities were supposed to improve in the direction desired. While important additions were made by this method to several varieties of grains during the early history of the company, a more important fact became obvious, that success was the exception, and it soon became a demonstration that the old idea of the arbitrary control of the qualities of a plant was manifestly untrue. It became evident that the plant develops after its own nature and can not be forced into other ways.

It was at about this period in the history of the work (1890) that

Nilsson became director. His thorough knowledge of the laws of variability and inheritance led him early in his work to the remarkable discovery that each so-called variety of grain really embraced a protean group of types, that is, each cultivated species was made up of numerous elementary species. Five hundred such species have been separated from the common peas, and all the cereals were found to contain several hundred. So the first problem in plant breeding was not the multiple selection of the German method, which would in all probability result in associating numerous elementary species, but rather the selection of a particular plant or elementary species. With this idea in mind about two thousand divergent types were gathered, in 1892, and the grains from each mother plant were sown in separate plots. The results exceeded all expectations. Barring chance hybrids and mutants, all the plots showed offspring of exceptional uniformity. For example, of 422 plots of oats 397 were uniform and only 25 were multiple. Furthermore, an examination of the pure types, in 1893, showed that their mutual differences were much greater than could have been surmised from the amount of variability in the field at the time of the selection. More important still, these types were found to comply with the most diverse requirements, some were highly resistant to frosts, others to disease, some were suited for hard land, and others for light soil; they differed in stiffness of culms, length of ears, size and number of grains, etc. In a word, hardly any demand could be pointed out which at least one of the new varieties did not meet.

Scarcely less important than this remarkable discovery was Nilsson's methodical study of the association of plant characters. While the relationship between the morphological characters of the plant and its qualities has been recognized in a degree for a long time (indeed, this is the basis of practically all of Burbank's work), it remained for the Svalöf station to demonstrate the intimate relation or correlation between plant characters and qualities—a principle of the greatest practical value. As soon as it was established that any field of grain contains a great many types so widely variable as to furnish suitable stock for the most different conditions, the need was felt for a method to enable the breeder to make the desired selection. Study along this line showed that numerous apparently insignificant characters remained fairly consistent in the successive sowings, and so offered a reliable means of distinguishing strains of widely divergent practical value. The problem then was to classify these characters and correlate them with their agricultural qualities. A compilation was begun, and a system has slowly been elaborated for many of the cereals, peas, vetches, etc., so that when a particular quality is desired in any of these plants in order to bring it into a form suitable for other conditions of soil or climate, or to comply with any want of the breeder, it is only necessary to know the marks associated with the desired quality in order to select a stock that will meet the required demands. In a word, these studies demonstrated that there is a regular coincidence of characters which hitherto have been regarded as

quite independent from one another. Furthermore, this association of characters was shown to obey natural laws, and a study of these laws enabled the breeder to predict a quality from the observation of one or several characters. The result of the work of the station is seen in the rapid improvement of the crops and in the certainty and directness of the results obtained. Thus in 1901 eighteen excellent new types were made available, a sharp contrast to the German method where twenty years of the most careful selection were well spent if a single new form was secured.

DeVries has made full use of this work in fortifying his mutation theory. Owing to the elaborate system of bookkeeping, every quality and character of a variety was recorded. As a consequence any deviation in the offspring from the mother plant became manifest at its first appearance. The records of the station show that several variations appeared from time to time that correspond with deVries's idea of a mutant. They always appeared suddenly, they could be separated from the other plants in the same way as the elementary species, and they were constant in the transmission of their new characters. But of much more importance to deVries is the light that this work throws upon the work of Rimpau and other breeders, who by years of careful breeding gradually so ameliorated the races of rye and other cereals (so they believed) as to produce a highly superior variety. Darwin was greatly influenced by this commonly accepted belief of breeders and applied it to his views on evolution, assuming that similar gradual changes went on in nature, and so led to the slow creation of species by a gradual, imperceptible series of changes. The so-called creation of new varieties by breeding has been a serious argument against the mutation theory and one that it has been impossible to answer until the results of Nilsson and other workers were available. It can not be questioned that the old breeders achieved success by a chance separation of a pure stock after years of haphazard selection. The work of Svalöf demonstrates that but a single initial selection of an elementary species is necessary, and it only remains to multiply and test the exact value and worth of the form by breeding it for a few years. Any further selections are of no avail in modifying the qualities of the selected species. We regret that the author has not discussed the continuous variations of these mutants; possibly the records of the station do not furnish, as yet, the necessary data upon this point. The main contention regarding the validity of the mutation theory is now reduced to this, Do the curves of continuous variation of the parent and mutant overlap? If not, deVries has established his theory; if they do, he has yet to prove that the mutant is not an extreme of continuous variation.

While much false and misleading information has been published regarding the work of Burbank, sufficient fairly accurate accounts of his accomplishments have been written to make his methods and achievements familiar to all. Mr. Burbank is an idealist; he is not concerned with the purely scientific aspects of horticulture, but is actuated solely

by a desire to contribute to the welfare of his fellow men. No better measure of the man could be given than his dream of developing a spineless cactus that by its adaptability to arid conditions and its edible qualities would make possible the doubling of the population of the world. He has no desire to accumulate wealth; as soon as his novelties are proven fit they are sold and their propagation and distribution is left to dealers. Thus it was with his first hybrid, in 1873—the Burbank potato. This was sold to a seed firm in 1875 for \$125. The Department of Agriculture a few years ago estimated that this potato had added to the agricultural productivity of the country \$17,000,000. It is safe to state that these figures will appear of little moment when as long a period has been given for the introduction of his recently derived berries, plums, walnuts, etc.

Mr. Burbank is little concerned with the amelioration of a race, and in this respect his work is quite different from that of the Svalöf station. His results in plant breeding have largely been obtained by hybridizing. Crossing of plants upsets the constancy of the species, brings them into a state of unstable equilibrium, and produces a chaos of forms. From these forms any of value are selected. Thus his methods have been perfected along the lines that have been followed since the beginnings of horticultural practise. Burbank, however, excels all other breeders in two respects. He starts with as many promising species as possible. Thus in his callas, five new types were added at once by a series of crossings with the familiar white kind; so also with his improvement of the California tiger lily, many of the lilies of the world have contributed their peculiarities for the enrichment of the native form. An idea of the extent of the material with which he works may be gained from the fact that he has had under cultivation 2,500 distinct species.

It is commonly believed that these improved forms are new creations. Hybridizing introduces into the offspring a new association of characters. No new characters are added. Every novelty has its basis in some previously existing form. The stoneless prune was derived from numerous crossings of a worthless French prune, *prune sans noyau*, with the ordinary varieties. This stoneless prune was known two centuries ago and had since been cultivated as a curiosity. Burbank saw the possibilities in associating its stoneless character with the flavors, colors, and meat of other forms. Crossings and selections have already isolated one stoneless form for the trade, with prospects that all the present varieties will finally be blended with the stoneless trait.

Mention can only be made of the excellent résumé of the mutation theory and of the important discussion to American farmers of corn breeding. Several features in the closing chapters on plant distribution will be taken with more or less reservation by many. The discussion of the principles of adaptation, however, are most timely. He very justly characterizes the attempts to explain the larger groups of characters of organisms as the expression of relationship with special features of the environment as “merely poetical descriptions of the way in which

we should like to understand and admire nature." We can not refrain from noting that the author occasionally drops into the realm of poetry, as when he refers to plants remaining on the mountains owing to their dread of enemies in the valley (p. 340), or when he speaks of plants seeking conditions (p. 335).

This book is one of the most valuable contributions to botanical science that has appeared in recent years. It will be widely read because of the clear scientific discussion of the principles that underlie plant breeding.

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A Primer of Psychology. LAURA BRACKENBURY. London: John Murray. 1907. Pp. 120.

The author expresses, in her preface, her special indebtedness to Professors Ward, Stout, and Johnson, of Cambridge University, and Professor James, of Harvard. Her technical point of view will be fairly familiar to those who have read the first two writers mentioned. An introduction gives some timely suggestions to the beginning student. Then the various methods of psychological study are presented and evaluated; it is maintained that the direct method must have logical and temporal priority. Next comes the "general analysis of mind," in which the *a priori* concept of the subject-object relation is made fundamental and its three phases are used to define the three classes of mental phenomena—cognition, affection (including pleasure-pain and appetition-aversion), and attention, or activity. There follow four chapters on the several stages of cognition: sensation, perception, imagination, and ideation. The subject of cognition is given quite half the space of the text, but its divisions, sensation and perception, are given relatively brief treatment, the usual details on their special modes and forms being omitted. The more fundamental laws of mental complication and unification are developed under perception and imagination; conditions of origin and growth of higher forms receive some attention; and the function of the universal and of the word is not omitted. Attention is viewed as activity of varying degrees, not as mere focalization. The discussion of how pleasure-pain is conditioned by each of the four stages of cognition is along quite traditional lines, physiological explanations being omitted. One of the most successful chapters in the book is that in which James's theory of emotion is described and criticized; emotion is found to contain an ideational factor. Will as selective action has its root in impulse; a good analysis of an act of will is given.

Following the text is a glossary which is rather unsatisfactory; for it is often formal to the point of emptiness, or its definitions fail really to define (*e. g.*, affection, ideation, mind). Then come some questions and exercises. These (especially the general questions in preference to those arranged by chapters) will be useful alike to teachers and students; and particularly those questions (of which there is a good proportion) that

call for a psychological interpretation either of literary passages or of concrete experiences and situations.

The book's point of view is both structural and functional, with the emphasis on the former. Purpose, need, and interest are frequently employed categories; but the author's neglect of the biological point of view involves a limitation in explanation by purpose. A sharp distinction is made between the psychological and the physical or physiological. The attempt is made to exclude all but psychical phenomena and conditions; but at some points it becomes impossible not to dwell upon physical or physiological conditions or concomitants, as in the cases of sensation, feeling, emotion, and will.

The principal terms are given rather clear-cut interpretation in the body of the text; their various meanings in psychology and common life are distinguished. Further, the author is careful to point out the relations (of likeness and difference, or of causal connection) that maintain between the various types of mental phenomena studied. A good deal of precision in the organization of the material is evident. In these and other ways the student's probable difficulties are kept in mind and attempt is made to guard him from error.

Comparatively speaking, however, this primer is a bare outline; its illustrations, while timely and clear, are too few; and it must be often hard for any beginning student to understand—witness much of the subject of cognition, particularly ideation and pp. 33-35 on perception. It is packed full of boiled-down material; it contains, perhaps, more distinctions than are needed; but it wants expansion and variety of illustration. I have just called it a "bare outline." To one who knows some psychology it might be rich in suggestion as well as compelling in its organization of material, but many a novice will find it formal and dreary.

When we consider under what conditions students really find an outline or syllabus prepared by their teacher useful, it is evident that this depends upon (a) the nature of the outline, (b) whether it is used before or after the class exercise mainly, and (c) whether or not it is supplemented by concrete collateral reading. The text here discussed would seem to be best adapted for use as a summary statement of data and views previously collected, and already presented and discussed in the classroom. It presupposes plenty of strong oral teaching as well as collateral readings. In this connection the references, at each chapter's close, to James, Stout, and Ward will be of use; for if these sources are few and lacking in great variety, they are yet relevant to the point of view and scope of the primer.

E. L. NORTON.

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Die Moralphilosophie von Tetens. Zugleich eine Einführung in das Studium der Ethik. MAX SCHINZ. Leipzig: B. G. Teubner. 1906. Pp. vi + 152.

Dr. Schinz believes that posterity will give Tetens a place among the

greatest moral philosophers. The worth of his ethical system has not been recognized as yet, partly because it was left in scattered and fragmentary form, and partly because it was overshadowed by the great work of Kant appearing soon after. The author of the present essay aims to remove the first hindrance by presenting Tetens's moral philosophy in its systematic entirety. In the first part of the book the psychological basis of the theory is given in detail; in the second the doctrine of moral values is explained. As Störing proves that Tetens's epistemology is a synthesis of Hume and Leibniz, so our author shows that his moral philosophy is a union of certain tendencies in English ethics with the rationalistic principles of Leibniz. Two grades of virtue are distinguished. The higher, which has absolute value, consists of complete self-mastery. It is the essence and perfection of virtue. In it the will rises supreme over all desires and emotions, and subordinates them to its rule of duty. In this ideal of absolute virtue we detect the influence of the Leibnizian philosophy. All absolute worth in man is a quality of soul because soul alone in human nature has incorporeal unity and thus is truly real. Hence the greater the strength and spontaneity of soul in man, the greater his reality. That faculty in the soul which possesses most spontaneity, viz., the will, has greatest worth and hence in its perfect freedom lies absolute virtue. The lower form of virtue, which has only relative value, is that of kindness of disposition. Here the desires and impulses are of such a nature and so adjusted that the conduct of the individual tends to increase his own happiness and that of his fellow-men. In this disposition the feeling of sympathy is the controlling factor. In his emphasis upon the principle of sympathy and his account of its development Tetens shows the influence of Hume and English ethics.

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La logique et l'intuition en mathématiques. E. BOREL. *Revue de métaphysique et de morale*, May, 1907. Pp. 273-283.

The author seeks an appropriate view of invention and discovery in mathematics, and aims to assign to this phase of mathematics its proper place in teaching the subject.

The importance of a knowledge of the principles of mathematics in the development and progress of the science proper has been grossly exaggerated. This exaggeration results in an erroneous impression upon some students that the whole realm of mathematics is controlled by deductive logic. The contention of the author is that the peculiar function of mathematics consists in the invention and discovery of analytic facts and the laws which govern their relationships. For such discovery Borel finds that the knowledge of the principles is not essential.

The material for the science of mathematics is derived from logic in quite the same way that the physicist obtains his objects of inquiry from nature. Logic gives to mathematics a great number of formulas and

propositions. From these the mathematician chooses the fundamental notions for his constructions. Indeed the work of the science proper begins when the mathematician makes this selection of certain formulas and relates them according to general theories. But one does not say that the natural objects of the physicist are the science of physics. Neither should we say that the formulas contributed by logic constitute the science of mathematics. This distinction of the principles of mathematics from the mathematical science proper is essential to Borel's point of view.

The peculiar work of mathematics, as stated above, consists of invention and discovery, which is, as will be shown later, more intuitive than deductive. For invention in mathematics is precisely what it is in any other science. The discovery, by Newton, of universal attraction was simply a new way of explaining given facts. Just so mathematical discoveries are merely new ways of explaining known facts. So that, in this particular, logic does not play any greater part here than it does in any other science.

To make clear his meaning of mathematical invention and to show what part logic plays in actual mathematical constructions, the author cites a number of examples from the different branches of mathematics. The following are typical of all the illustrations given:

Given four points, A, B, C, D , on a straight line Δ , a point O not in Δ , and Δ' another straight line not passing through O . Join OA, OB, OC, OD which meet Δ' in A', B', C', D' , we shall then have:

$$\frac{CA}{CB} : \frac{DA}{DB} = \frac{C'A'}{C'B'} : \frac{D'A'}{D'B'}$$

This is a simple theorem in geometry. Its proof has been known for a long time. But to discover in this theorem the theory of an harmonic ratio and its numerous consequences required the genius of Chasles. Instead of being a simple theorem in geometry it becomes the fundamental notion of projective geometry. To make this discovery no deductive logic was required. It was made precisely as discoveries are made in the natural sciences. Nor did the new discovery invalidate the old theorem of geometry. It merely presented a new way of explaining the given facts.

The shortcomings of logic to explain the whole of mathematics is clearly and forcibly shown when we examine two orders of inquiry apparently different in character between which a close correspondence has been established. When Klein finds that the study of the regular icosahedron simplifies to a considerable extent the algebraic theory of the equation of the fifth degree, and that, furthermore, this correspondence throws light on the study of the differential equation of the second order, one sees clearly that the discovery was not the result of deductive methods solely.

Again, if we examine certain general theories of mathematics we

shall find here also that logic does not occupy the entire field. Thus the theory of the functions of the complex variable is developed in two distinct ways. Weierstrass develops the theory deductively, while with Riemann the geometric representation of the complex variable is essential. Thus the intuitive character of even such an abstract theory is evident.

The article closes with a plea for more adequate pedagogic methods in the teaching of mathematics. From the point of view of the student, the chief aim has been to develop the logical faculty. While this is not to be neglected, Borel would introduce such methods as would foster mathematical inventiveness with the aim of developing the mathematical ability to discover analytic facts and the laws governing their relationships.

JACOB GREENBERG.

NEW MARKET, N. J.

JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. August, 1907. *La cryptopsychie* (pp. 113-144): E. BOIRAC. - This is a study of both fragmentary and organized unconscious psychic processes with reference to the mental phenomena which they explain and to their own explanation. *Herbert Spencer d'après son autobiographie* (pp. 145-158): F. PAULHAN. - A synopsis of the autobiography of Herbert Spencer as translated and abridged by Henri de Varigny. *Le rôle de l'analogie dans les représentations du monde extérieur chez les enfants* (pp. 159-173): R. COUSINET. - The common theory that the child perceives analogies in his experiences because he needs them is incorrect. He perceives analogies before perceiving differences, but with increasing maturity differences become more easily perceived. *Analyses et comptes rendus*: F. Paulhan, *Le mensonge de l'art*: P. SOURIAU. H. Riemann, *Les éléments de l'esthétique musicale*: L. DAURIAC. J. Baruzi, *Leibniz et l'organisation religieuse de la terre*: A. PENJON. H. Siebeck, *Zur Religionsphilosophie*: J. SEGOND. M. J. Lagargette, *Le rôle de la guerre*: S. JANKELEVITCH. Kropotkin, *L'entraide*: G.-L. DUPRAT. A. Prins, *De l'esprit du gouvernement démocratique*: JANKELEVITCH. Mariano Mariani, *Il fatto cooperativo nell'evoluzione sociale*: G.-L. DUPRAT. Fanciulli, *L'individuo nei suoi rapporti sociali*: G. RICHARD. C. Piat, *Platon*: C. HUIT. *Revue des périodiques étrangers*.

REVUE PHILOSOPHIQUE. September, 1907. *Les conséquences morales de l'effort* (pp. 225-247): G. TRUC. - Effort is the spring and support of all morality as well as the source from which it gets its whole value. *L'ordre des sciences* (2^e et dernier article) (pp. 248-271): F. LE DANTEC. - This paper shows the needs that lead us to take "energy" as the invariant of our changing world when we found an "impersonal" science. *L'imitation dans l'idée du moi* (pp. 272-281): J. PAULHAN. - Our idea of the "I" is the application to our feelings and ideas of a form

borrowed from others. *Notes et discussions: Sur un cas de paramnésie* (pp. 282-284): L. BÉLUGOU. *Explication ou expression: Critique des théories psychologiques* (pp. 284-287): HENRI PIÉRON. *Analyses et comptes rendus*: G. Papini, *Il crepuscolo dei filosofi*: A. L. Eucken, *Hauptprobleme der Religions philosophie der Gegenwart*: L. ARRÉAT. Sollier, *Essai critique et théorique sur l'association en psychologie*: L. DUPUIS. Binet, *L'année psychologique*: B. BOURDON. Sternberg, *Charakterologie als Wissenschaft*: L. ARRÉAT. Faguet, *Le socialisme en 1907*: G.-L. DUPRAT. Dubief, *A travers la législation du travail*: G. RICHARD. *Revue des périodiques étrangers*.

Hart, Gordon. *Woman and the Race*. Westwood: The Ariel Press. 1907. Pp. 264. \$1.

Kellogg, Vernon L. *Darwinism To-day*. New York: Henry Holt & Co. 1907. Pp. xii + 403. \$2 net.

Papini, Giovanni. *Il pilota cieco*. Naples: Riccardo Ricciardi. 1907. Pp. 200. 3 lr.

Riley, I. Woodbridge. *American Philosophy: The Early Schools*. New York: Dodd, Mead & Co. 1907. \$3.50 net.

Rogers, Arthur Kenyon. *A Student's History of Philosophy*. Revised edition, 1907. New York: The Macmillan Co.; London: Macmillan & Co. Pp. vii + 511.

NOTES AND NEWS

FROM *Nature* for September 12 we take the following: "The third volume, which deals with linguistics, of the Reports of the Cambridge Anthropological Expedition to Torres Straits has now been published by the Cambridge University Press. The volume is by Mr. Sidney H. Ray, and consists of four parts, dealing respectively with the languages of Torres Straits, the languages of Cape York Peninsula, North Queensland, the languages of British New Guinea, and the linguistic position of the languages of Torres Straits, Australia and British New Guinea. . . . The following general linguistic summary gives the results of Mr. Ray's work on the material collected by himself and Dr. A. C. Haddon with the assistance of numerous other workers: (1) The western language of Torres Straits is Australian. (2) The eastern language of the Straits is morphologically related to the Papuan of New Guinea. (3) There is no genealogical connection between the two languages of the Straits. (4) There is no evidence of an African, Andaman, Papuan or Malay connection with the Australian languages. There are reasons for regarding the Australian as in a similar morphological stage to the Dravidian, but there is no genealogical relationship proved. (5) The Papuan languages are distinct from the Melanesian. They are in some respects similar to the Australian, but their exact positions are not yet proved. (6) Languages of the Papuan type are found in German New Guinea. There is no

direct evidence of their existence in Netherlands New Guinea. (7) There is insufficient evidence to connect the Papuan with the Andaman or Halmaheran languages. (8) In the northern Melanesian Islands a few languages are found which have Papuan characteristics. (9) Differences of grammar and vocabulary which appear in other island languages appear to be remains of an archaic Melanesian speech. There is no grammatical evidence to connect them with the Papuan, but they show the Papuan diversity of vocabulary. (10) The Melanesian languages of New Guinea and those of the islands are closely (genealogically) related in grammar and vocabulary. (11) The Melanesian languages of New Guinea and the islands stand in the same position with regard to the Polynesian. Both the former represent an older and fuller form of speech of which the Polynesian is a later and more simplified descendant."

A COURSE of lectures is to be given in Columbia University during the current academic year with the special purpose of offering to the students of the University a general view of the entire outlines of modern knowledge and a definite conception of the province and problems of each of the sciences and of its relations to other sciences. By means of such a course it is hoped to offset in some degree the effects of the specialization inevitable in present-day university study, and to make it at least possible for all who leave the University to carry with them some sense of the unity of knowledge, and of the correlation and interdependence of its several provinces. The lectures, which are open to the public, are given on Wednesdays, beginning October 16. The program is as follows: Mathematics, Cassius J. Keyser; Physics, Ernest Fox Nichols; Chemistry, Charles F. Chandler; Astronomy, Harold Jacoby; Geology, James Furman Kemp; Biology, Edmund B. Wilson; Physiology, Frederic S. Lee; Botany, Herbert M. Richards; Zoology, Henry E. Crampton; Anthropology, Franz Boas; Archeology, James R. Wheeler; History, James H. Robinson; Economics, Henry R. Seager; Politics, Chas. A. Beard; Jurisprudence, Munroe Smith; Sociology, Franklin H. Giddings; Philosophy, Nicholas Murray Butler; Psychology, R. S. Woodworth; Metaphysics, Frederick J. E. Woodbridge; Ethics, John Dewey; Philology, A. V. W. Jackson; Literature, Harry Thurston Peck.

A JAPANESE translation of Professor Warner Fite's "Introductory Study of Ethics" by N. Oshima, revised by Professor Rikizo Nakashima, of Tokyo University, has recently been published.

MR. F. N. FREEMAN, assistant in the Yale psychological laboratory, is to substitute for Professor Gault in psychology and education during the fall term at Washington College, Chestertown, Maryland.

PROFESSOR GEORGE SANTAYANA, assistant professor of philosophy at Harvard University, has been made professor of philosophy.

DR. ERNEST ALBEE, assistant professor of philosophy at Cornell University, has been made professor of philosophy.

DR. G. W. T. WHITNEY, of Bryn Mawr College, has been made instructor in philosophy at Princeton University.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE DOCTRINE OF THE EJECT

III. THE DOCTRINE OF INSTINCTIVE KNOWLEDGE

IN the present paper I propose to bring forward some thoughts suggested by Professor Strong's treatment¹ of the eject. And I can not forbear, at the outset, to comment upon the extraordinary clearness and charm of the author's writing, and upon the acuteness of the observations with which one meets in many passages. Professor Strong may be wrong in some things; but there is never any doubt as to what he means, and his book may be recommended as a model to those who believe that philosophers should engage in the open, and not shoot wildly at one another out of a thicket of verbiage in which no object can be distinguished with clearness.

Professor Strong thinks it hardly necessary to offer proof of the proposition that, for each of us, the minds of other men and animals are not empirical facts. He holds that those who seem to think that other minds are immediately known, really have in mind the certainty of the knowledge rather than its immediacy. I see another man's body; I *infer* his mind—a something real, yet wholly and inevitably beyond my consciousness.

This argumentation, it is claimed, neither rests on nor requires the proof of other minds: it takes them for granted. The justification of this belief, we are told, is a problem which has been too much neglected by philosophers. It is customary to explain it as resting upon an argument from analogy, thus: Other men make movements which resemble those due to thoughts and feelings in myself; consequently they have thoughts and feelings just as I have.

The analogy Professor Strong regards as imperfect. My own thoughts and feelings are known to me immediately. Those which give rise to other people's movements are not given. Now, if in the case of one other person I knew intelligent movements to be due to thoughts and feelings not given (to me), I could draw the inference from the movements of a third person to his thoughts and feelings. The analogy would be perfect. But when I argue from my thoughts

¹ See Chapter X., "Why the Mind has a Body." New York, 1903.

and feelings, which are given, to another person's thoughts and feelings, which are not given, I pass to a new mode of existence, and the conclusion is not warranted by the premises.

From this consideration Professor Strong is led to maintain that I can have no rational ground for assuming that anything whatever exists outside my mind. "No argument from analogy can possibly prove the existence of things extramental."

This does not mean that the existence of other minds is denied or even doubted. On the contrary, it is held that we know with *perfect certainty* that they exist. But it is claimed that we have here a kind of knowledge founded neither on reason nor experience, but on *instinct*. That there are other minds, we know by instinct; for information as to *what they are like*, we must fall back upon the argument from analogy criticized above.

Before speaking of the doubts which arise in my mind when I reflect upon Professor Strong's doctrine, it is well that I should emphasize certain truths which, in my opinion, it very justly maintains. In the first place, it is held that we are not directly aware of the minds of other men and of the brutes. This seems to be in harmony with common sense and with science; and any attempt to prove the contrary doctrine is, I think, doomed to inevitable failure. In the second place, it is pointed out that we reach other minds by making an *inference*, and that we are guided, touching what we shall infer, by an argument from analogy. In the third place, it is recognized that men do not expect to verify this inference as they verify inferences which have to do with physical facts. If I am in doubt whether a certain man really feels the emotion which he seems to express, I do not look to resolve my doubt by a direct inspection of his consciousness. In the fourth place, it is insisted that, notwithstanding all this, men do not really doubt the existence of other minds. Our knowledge of them is held to be certain.

In all this I agree with Professor Strong point for point, and I am glad that he has marked out the problem of the eject with such clear lines. The points around which my doubts cluster are: (1) His statement that the argument from analogy is imperfect, and furnishes no rational ground for the assumption of other minds; and (2) his maintaining that instinct furnishes a basis for the inference, and supplements the deficiencies of the argument from analogy.

Let us consider, first, the statement that the argument from analogy is imperfect, and that it does not justify the inference to other minds. We are reminded of the reflections of Huxley and Clifford—of the former's statement that we can not absolutely prove any consciousness beyond our own; of the statement of the latter,

that he can not pretend to say how the inference can be justified. The objection is the usual one: in drawing inferences touching physical things, we have verification of such a sort that we can, at least, come back to direct inspection somewhere and sometimes. Here such verification seems to be excluded; how, then, be sure of the truth of our inference?

But, even admitting this difference between the inductive reasonings which have to do with material things and the analogical inference to other minds, I feel like demurring to the statement that we have no rational ground for our inference. What is a rational ground? What have we a right to mean by the word *rational*? And what may we justly mean by *proof*?

What is our procedure in the case of inferences touching physical things? We find x to be related to y in one or two or three instances; we have reason to believe that the connection is not an accidental one, and due to the presence of other factors. We observe an x in a new instance, and we infer a y . In certain cases, we can verify our inference, and observe that we have not been mistaken in connecting a y with our x . With renewed confidence, we pass on to other cases not yet verified, and some of them not directly verifiable. This we call rational; we do not regard ourselves as without proof for our inferences.

One may learn a good deal from that acutest of analysts, David Hume, even when one refuses to fall in with his skepticism. Long ago, Hume maintained that an appeal to past experience decides nothing touching a present case. I do not, of course, agree with him; but I should like to call attention to the fact that, in every inductive inference, we are going beyond the *verified*, and are assuming that we are concerned with what is *verifiable*. Just as soon as any inference is directly verified, we have no longer to do with an inference, but with experienced fact. Every inference, so long as it remains an inference, is based upon an assumption. Shall we say that it is not rational? that we have no proof of its truth?

Surely not. Such inferences are the very type of what is rational. This is what we mean by the word, when we are working in this field. In all our reasonings, we must come back to something that is ultimate. The only question is: What shall we accept as ultimate? And I know no other way of settling this than by making a careful analysis of human experience as it presents itself in common life and in science. Both in common life and in science inductive inferences are accepted as reasonable. On the strength of them, our knowledge of the world is built up. A doubt of them seems gratuitous. To suggest that they are unreasonable is itself unreasonable.

Now, assuming that the consciousnesses of different persons are cut off from each other in such a way that they can never be made matter of direct inspection, we must admit that the argument from analogy which leads to other minds is not to be confounded with the inductive argument that leads to the assumption of physical facts. Shall we, on that account, repudiate it? Is it reasonable to do so? The objection brought against it is, that it does not come up to the standards set by the inductive argument. But it is a fair question whether we have a right to judge it by this standard at all.

Let us consider the rôle which the argument actually plays in our knowledge of the world of matter and of minds. What do we know of what goes on in the brains of men and of the brutes? How do we arrive at a knowledge of what they will do under given circumstances? I have trod the usual road of those who study the physiologies and who make dissections, and I frankly admit that the comparative smallness of the psychological harvest has been depressing. Such studies are undoubtedly to be recommended, if only as a useful expedient for keeping one's feet on the ground and counteracting the tendency to unwarranted philosophical flights. But what I know of another man's character and probable course of life, I do not know through an acquaintance with his cerebral machinery.

Nevertheless, I know a good deal about other men. Sometimes I can guess what a man will say, before he has spoken. Sometimes I know the very objections which he will formulate and put into print when his book is criticized. I know that Smith will answer rudely, and that Jones will turn away wrath. Every day and all day I am attributing ideas to other persons, and, with the aid of this expedient, I am satisfactorily explaining and predicting their actions. And in all this I follow the guidance of the abused argument from analogy, and nothing else.

Nor is the verification of particular facts—in a certain sense of the word verification—excluded. To-day I infer that Cæsar is ambitious; to-morrow I conclude that I was mistaken. In each case I depend upon evidence. Where the evidence, the analogical evidence we have been discussing, is full and satisfactory, no one thinks of harboring a doubt. Indeed, he who complains that his inference to other minds can not be justified, on the ground that verification by direct inspection is out of the question, should be brought to a realization of the fact that his *doubt* of the inference can not be justified either, and for precisely the same reason.

Does it not seem to follow from this that either proof or disproof, when we are concerned with the inference to other minds, must not be looked for in the same quarter as it is when we have to do with

physical things? May our inference not be *rational*, although not the same as the ordinary inductive inference? What has the word "rational" a right to mean? Surely, only an investigation into its actual use can help us to answer this question.

As to the second point: May we fall back upon instinct, and maintain that it assures us that other minds exist?

It should be remarked that our power to infer other minds extends just so far as the analogical argument will carry us, and no farther. Where the analogy fades out, our inferences fall away. Neither instinct nor anything else appears to give us an independent knowledge "that" other minds exist, leaving it to the argument from analogy to fill in the hollowness of the "that" with an intelligible "what." The whole burden of proof seems to be borne by the argument from analogy.

If, then, we are to fall back upon instinct for anything, I suppose we must content ourselves with saying that instinct tells us that the argument from analogy is *valid*. Of course, it remains for us to inquire what the word "valid" means in such a case. It can not mean that this argument is identical with the usual inductive argument, for, as Professor Strong has pointed out, it is not identical with it. Apparently it can only mean that we find ourselves confronted with an ultimate fact, and need not try to get beyond it.

But do we use the word "instinct" properly when we employ it in this way? We commonly call that instinctive which is not done with a clear consciousness of its end and meaning. The child instinctively draws the inference to other minds. It is not, in such instinctive inference, guarded against error, for it may attribute mind to a doll. The grown man constantly infers other minds with little reflective consciousness of what he is doing. One may, however, be very clearly conscious of the nature of one's inference, and may be acting in the light of reflective thought. In other words, whether we shall call the inference instinctive or not seems to be determined by the degree of mental development of the individual we are considering. In calling any activity instinctive we are not offering a justification of it; we are merely pointing out that it is exercised rather blindly.

Let us turn again for a moment to the inductive argument as it has to do with physical things. One may draw this inference without reflection, or one may be clearly conscious of the process. That is to say, one may reason instinctively or one may reason consciously. But one can hardly say: *What* one is to infer, in any given case, is a matter of inductive reasoning; *that* one is justified in passing at all from past experiences to a new instance, is guaranteed by instinct, and thus is the Humian doubt laid to rest.

Professor Strong has suggested that those who think that other minds are immediately known probably have in mind rather the certainty of the knowledge than its immediacy. I can but believe that what is most prominent in his own thought is the truth that the argument from analogy must be accepted as ultimate and as trustworthy even in the absence of such verification as we may look for in the world of physical things. In this I think he is entirely in the right. But I should call the inference to other minds rational, and I should not regard it as any the more certain because it is sometimes drawn instinctively.

There is one further point upon which I should dwell before closing this paper. In the above, I have purposely taken the usual position, which looks upon two consciousnesses as always and inevitably "ejective" to each other. But in Professor Strong's book (p. 222) there is an acute passage which reads as follows: "Memory is not our only means of communication with our past experiences, and reproduces for us but a minimal part of our mental history. In filling in the gaps we are reduced to conjecture, based on inference, the testimony of others, etc. Now, such conjecture presents the closest analogy to the process by which we infer other minds."

This passage I had not read when my "System of Metaphysics" went to the press, or I should certainly have commented upon it. The same thought had occurred to me, but I had found in it a significance² which Professor Strong has not found in it.

The point is this: My own past experiences may be known to me in two ways—I may *remember* them, or I may *believe in* them on the basis of such testimony as leads me to believe that other men have had or have certain experiences. In other words, I may know such experiences—to use Clifford's terminology—either as *object* or as *eject*. Now, when I am told that, at a certain time in the past, I said or did certain things, I may accept the fact, and yet may be quite unable to recall at once the occurrences in question. Nevertheless, if the circumstances are dwelt upon and the matter pondered over, I may come to remember what has been forgotten.

This means that, in certain instances, *what has been known only as eject may come to be known as object*. The experiences are common enough, and I think their significance has been overlooked only because men have not sufficiently reflected upon them.

When we add to these the familiar phenomena of the hypnotic trance, of multiple consciousness, etc., phenomena upon which I have dwelt at length in the volume referred to above, we are, I think, compelled to admit that we are not justified in maintaining that what is

² See Chapter XXVIII.

at any given time ejective to a given consciousness must necessarily always remain ejective to that consciousness. There are sufficiently numerous cases in which the existence of other-consciousness seems to be directly verifiable in a way closely analogous to that in which the common inductive inference is verifiable. Something may be inferred as eject, and later presented immediately as object.

To be sure, there are limits to such verification. When Peter and Paul lie in the same bed, they remain Peter *and* Paul, and are ejective to each other. But when Peter and Paul lie in the same brain, we have sometimes Peter *and* Paul, and sometimes Peter-Paul. I think this is not without its significance for the doctrine of the eject.

However, I do not mean to base upon such facts the reasonableness and the certainty of the inference to other minds. If no such fact existed, I should still hold the inference to be rational and trustworthy. As I have said above, we can only discover what the word "rational" means by an examination into the actual use of the word; and I have further indicated that he who doubts whether we may make the inference to other minds, on the ground that other minds can not be perceived as can physical things, must admit that his doubt is a gratuitous one, and can never by any possibility be *proved* to have a foundation. Where both proof and disproof are, by hypothesis, wholly out of the question, we do not seem to have a problem before us at all. Certainly we are not in a position to complain that we lack proof of something. If men believe in the eject, and think that they have in some instances proof of its existence and in others no proof, it is clear that they are using the word "proof" in some sense that has a bearing upon the matter. It is not our duty to give the word a meaning of our own; it is, rather, our duty to find out what men mean by it in common life and in science.

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CONCRETE CONCEPTUAL SYNTHESIS

IN the theory of knowledge and in psychology we find a place given to perceptual synthesis and to abstract or general conceptual synthesis, but not, so far as I can discover, to concrete conceptual synthesis. By concept I understand a meaning marked off by a symbol, which has always a constant significance, though amid the varying contexts which the symbol at one time and another *suggests* it may be hard to say what is the meaning which it always has. If the meaning change then we have a new concept, not a changed one; for the new may be compared with the old concept.

A concrete concept, I understand, is a concept of a particular object. In the sentences "Charles I. was beheaded in London" and "I shall go to London next summer," there must be a constant meaning that enables me to conclude that I shall go to the city where Charles was beheaded. But it is only in the *sciences* of concrete conceptual synthesis, namely, history and geography, that it is possible to state approximately what the meaning of such a concrete concept is. Concrete conceptual synthesis is the joining of such concrete concepts, not under a generalization, as when we say that London, Leeds and other places visited are all cities of England, but in the concept of another particular object. Thus the concepts "London" and "Leeds" are in geography parts of the concept "England," of the concept "Great Britain," of the concept "Europe," etc.

In logic, in psychology, and in the theory of education I find no clear account given of this type of organized knowledge. This has resulted, I believe, in a serious and sufficiently obvious defect in educational practise. It seems that educators, following the lead of the logicians in this matter, have in their theories of education ignored an essential and obvious part of the process of acquiring knowledge. Hence I venture to conclude that in the works of English speaking logicians, at least, there is an appearance of neglecting the corresponding part or side of knowledge itself, or of confusing it with another part.

I will offer an illustration of concrete conceptual synthesis in which the particular objects are not things, but events. As I go into a village post-office, the postmaster with his assistant is loudly disputing with a villager concerning the delivery of the mail, on a point in which the village as a whole opposes the officials. In spite of their different motives the master and his assistant have the same purpose, and in respect of that purpose are proper subjects for comparison, abstraction and *generalization*. But the office and the village, in spite of their opposing purposes, are a unity in this respect, that the end toward which they actually are working is one; they are united, not through a common purpose, but by a single tendency. Their actions are parts of one and the same action. When the dispute is settled it will be settled for both at once. They move together in one direction, fighting each other, and little knowing, perhaps, what results they actually are bringing about in concert.

The recognition of all these points may occur as I listen, and form, indeed, according to current terminology, part of my percept, of my consciousness of particular material objects present to sense. If, however, the event should become the subject of investigation

and record, if it should even enter the gates of history, it will there assume the character of a concept. For certain features will be marked as essential and constant, and those features will be *meant*, whenever the dispute is referred to. It is so with the Battle of Lexington; the historian says that the affair was *essentially* this and that. The name "Lexington" may call up, may suggest many other things that are not essential. But the concept "Battle of Lexington" has a certain meaning distinct from accidental suggestions. That meaning is determined by the nature of the history that is being written; it is not the same in an English or a universal history as in an American history.

In the body of history certain concepts have attained meanings which survive criticism, and are regarded as fact. They are universal in the sense that they are looked upon as things or events that might have been experienced by any one who was present, rather than as a mere individual memory of one or more persons who happened to be present. But they are in no way general, being the concepts of individuals or of particular events. They are none the less scientific, for they are essential parts of the web of past fact that the science of history has woven; they are organized knowledge. And, in like manner, the village of Lexington is part of the organized knowledge which is the subject-matter of geography. These two sciences, geography and history, I urge, are sciences of concrete, as distinguished from abstract or general, conceptual synthesis.

It would seem that the primary function of the geographer in times past was to describe the concrete existent world, not in terms of general laws, but as a particular fact made up of many particular facts which have their place in the world. From the traveler he learned what reactions the world offered in this part and in that to one who should go there from curiosity, or for trade, or for conquest, or with missionary zeal. And still, to-day, however interested we may be in the laws that are exemplified in the various parts of the world, our first interest is to know what is *there*. We seek a clear conception of the different parts of the world as a concrete whole, that we may know what reactions it will offer to our enterprise.

But the first great historical synthesis of which we know was written, not to speak of possible reactions, but of past actions;¹ not to inform us of a world alien to us and reacting to us, but of the world at one with us, acting with us. Herodotus says that he would

¹ I elaborate this position in my dissertation "The Concept Action in History and the Natural Sciences," Macmillan, 1905.

inform the heroes of the Persian War in how great an action they had participated. He therefore would present the quarrel of Hellen and Mede from its beginning, in all its extent. The actions of the Greeks then living and listening to him formed part of this great action, and derived their significance from their place in it. History, therefore, like geography, seems primarily to be a concrete synthesis, a placing of definite concrete concepts in an organized concrete conceptual whole which is the material of the science of history.

We have, then, it seems to me, two sciences of concrete conceptual synthesis, to be distinguished from such sciences as biology, geology, sociology and psychology, which have to do with abstract or general conceptual synthesis. But one may read through Mill's "Logic," Jevons's "Principles of Science," Hobhouse's "Theory of Knowledge," and Pearson's "Grammar of Science" without getting any account of such a distinction. We receive but a hint here and there, in Hobhouse's work, of a type of scientific conceptual synthesis radically distinct from that of generalization.

And if we turn to books on educational theory we find the same position assumed, the same ignoring of a second type of knowledge and science no less important than that of generalization. In their well-known and most effective little work "The Method of the Recitation," Drs. Charles and Frank McMurtry assert that "eminent authorities on teaching now agree upon this law" that the acquisition of knowledge consists in proceeding from individual to general notions (p. 289). I have referred to the eminent authorities and have found no exception to urge. These educators appeal also to current psychology for support of their assertion that knowledge is essentially of this one type; and indeed, with the exception of the "psychology" Professor Dewey published nearly twenty years ago, there is, in English and American psychologies, so far as I can discover, no suggestion that knowledge is dual in character, and that there is a science of organized concepts of particular objects.

If one considers the process of acquiring knowledge, the distinct character of concrete conceptual synthesis, and its importance, become more evident. Even before he learns general truths there slowly grows in the child's mind a concrete synthesis of house and room, school and street, city, river and hill, countries, continents and oceans, all of them parts of that world which he is to know, which is the material, near or far removed, of his life. This concrete synthesis, in the course of school instruction, comes to deal, not with mere percepts and images, but with concepts, as the material of that synthesis takes clearer definition and becomes more thoroughly organized. Thus it is a matter of conceptual synthesis and of sci-

ence, though not of generalization, that Bombay and Calcutta are cities on the two coast lines of India, distant so far from each other, knit by road and rail and telegraph, and related commercially and politically in certain concrete ways.

It is upon the basis of such a concrete synthesis, which is geographical in the old sense of that term, that the child can with comprehension build his knowledge of general truths, economic, geologic, etc. Before the child is capable of appreciating that Minneapolis is "the chief representative and type of this whole series of cities on the upper Mississippi River,"² he must master the more interesting fact that Minneapolis is *there*, related concretely in divers ways to other parts of the world.

The second type of concrete conceptual synthesis, the historical,³ also precedes the appreciation of general truths. An important foundation for all historical synthesis is laid by securing from the child a correct narration of his experience, and by leading him to compare his account with those of others. Thus is built up the notion of a single great line of events, of things that actually occurred; which is known in different ways by the several children present, but which can be known in substantially the same way, at least in several respects, by all. Slowly the knowledge of the one reality that is potentially common to all knowledge broadens. The child becomes conversant with the stream of history; he builds up an intuition of the years within the whole of time.

A second basis for historical knowledge is laid in the stories of the heroes of the world and of its martyrs, which give comprehension of the actions that are possible. But historical synthesis proper begins for the child when he is invited to learn in what great actions his own small life has its place. To this end in our public schools he learns to conceive the activity of his country, the course of action which gives unity to its history, and which indeed constitutes its history and its life. In this greater action the agencies of men, of cities and states take part. While in our religious schools the child is led to see the place of his life and action in the progressive action of God's church and kingdom. Gradually a concrete synthesis is attained of the world's history, in which party strife, territorial expansion, industrial progress, intellectual advance and spiritual uplift somehow coexist, forming, in some measure and in some sense, a single action which we feel as the life of the world.

I think it is a fair criticism of present American education that

² "The Method of the Recitation," Macmillan, 1905, p. 23.

³ The distinction that history is temporal, while geography is spatial, is, I think, not correct; for history is clearly spatial as well as temporal.

in teaching geography it partly sacrifices the knowledge of the world as a concrete fact and as the material of man's life for the knowledge of those natural and social laws which prevail in the world, through obedience to which men make use of that material. In like manner, it sacrifices the knowledge of the life of our nation, as a concrete object that commands our love and service, for a knowledge of the laws that govern social life. Thus, in the work which I selected as typical, the aim suggested for the lesson on the Battle of King's Mountain is the generalization: "The common people, therefore, out of their own love of liberty and on account of their great courage and energy, contributed much to the success of the Revolutionary War."⁴ It is not suggested that the place of that battle in the drama of the nation's awakening is, after all, the most important thing about it; in fact such an opinion is apparently barred by the principles which the book, in common with "eminent authorities on teaching," adopts.

The ethical significance of the point I urge is surely very great. Mr. Bryce has made us familiar with the sincerity of the medieval conviction that men lived and moved in a greater life, the "mysterious unity" of the Holy Empire. Other times, other methods; the same lesson of solidarity has to be taught now; and it must be taught, not as a matter of faith, but of knowledge and science. But the existence of the greater unities of life and action can be known, not by perception, nor by generalization; it is a matter of concrete conceptual synthesis, of historical construction.

Again, social action requires knowledge of the individuals with whom we act. The application of generalizations in interpreting the conduct of another would carry us only a little way, and, perhaps, mislead. The study of the person's life as a concrete unity, a particular synthesis of particulars, reaching back into the years, and combining many phases of the soul's activity, is a more helpful and a truer method of study. Need it be said that our present theory of instruction emphasizes the former habit of dealing with facts, and even discourages the latter?

It would be most instructive to contrast the type of mind that deals in generalizations with the mind that grasps conceptual unities concretely. It is the latter alone which becomes acquainted with the great things of the earth, which can enter into the life of civilization, or of Christendom, or of his own nation, and of his own locality. He alone can form a clear idea of the singleness of action and life which may underlie the conflicts of the several parts of that life. In generalization the wider the application of the principle,

⁴ "The Method of the Recitation," p. 281.

the poorer are the particular objects to which it applies; but in concrete conceptual synthesis the most highly organized knowledge deals with the most remarkable and meaningful of objects.

What, then, may we ask of the logician, that he may aid the educator and the moralist to appreciate duly this type of knowledge and science? The first obligation is to mark distinctly the characteristics of the sciences of geography and history in contrast with the character of all sciences of generalization. Here is work for which Kant in his third critique, Hegel in his "Logic" and his "Philosophy of History," Droysen in his "Principles of History" and Rickert in "Die Grenzen der Naturwissenschaftlichen Begriffsbildung" have prepared the ground.

The second is to lay down the principles that govern this type of knowledge and science, and to list the several types of concrete conceptual synthesis that are possible. Merely to illustrate what I mean, I suggest that in historical construction proper the synthesis of particulars is always in terms of the tendency that is common to them both; but community here differs from that found in the sciences of generalization, because the tendency that is said to be common to agencies is that *in which* they unite, and not that which exists *in each of them*. The common tendency that unites us as Americans in the destiny of the nation is greater than any tendency that can be found in us as mere individuals. Whereas the common tendency that biology or sociology may find in us all is but a poor part of the richness of each individual life. The common tendency which unites clerical and republican in the life of France is probably not to be found either in the republican or the clerical party; it exists through their strife, the hidden harmony their opposition creates.

Another principle is worth noting because it also marks a difference between the terminology current in the logic of generalization and that which would prevail in a logic of concrete conceptual construction. Every concept involves a distinction between the constant meaning of a symbol and the accidental associations which may occur with greater or less frequency. I mentioned the Battle of Lexington to illustrate this fact in the case of a concept of a particular object. Such a distinction involves stripping the object of some of the richness of perceptual or emotional life that may pertain to it. It is no part of the concept of the Battle of Lexington that one of the British officers had red hair and loved a maid in Staffordshire.

In the sciences of generalization a similar impoverishment takes place. In sociology, *e. g.*, the Battle of Lexington would be classed with those of Bennington and King's Mountain in respect of its

origin and other characteristics, and outside such characteristics that battle would have no content for the sociologist, as such. As such sciences attain greater perfection the objects possess less and less content. The relations expressed in the general laws discovered possess the content. The widest generalizations are those that apply to the smallest particles of matter, or to biological elements and their specific functions.

The difference, then, to which I referred is this: that whereas in the sciences of generalization, the more highly organized the science the poorer the concept of any *object* to which the generalizations apply, on the other hand, in the sciences of concrete conceptual synthesis, the concept and definition of an object are the richer the more highly organized historical and geographical science becomes. Thus the concept of the Battle of Lexington is to the historian exceedingly rich in essential content, in spite of the abstraction from perceptual elements to which I have referred. It is not the relations, merely, in which the object stands that make it of importance. The participants are *conceived* as actually bringing, in their ways of thinking and ways of acting, the products of the conditions which resulted in the battle.

Other suggestions towards a logic of concrete conceptual science will be found in Rickert's work already mentioned; and I have brought together some points in my dissertation (*vide supra*), especially in Chapter VI. I am convinced that proper instruction in history and geography will not be given until the logician brings home to the educator the radical difference between the two classes of knowledge and science which is the theme of this essay.

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THE ANTI-REALISTIC "HOW?"

AGAINST natural realism as a theory of knowledge the critical query is raised, "How can consciousness perform such a self-transcending function?" One eminent exponent of another view epithetizes this as the "putty, magical faculty theory"; another declares emphatically that the consciousness relation "ought not to remain a pure mystery"; and there is a general philosophical sentiment that the fatal weakness of natural realism is its failure to "explain" perception. Restatements of the conception in vivid metaphor or plain Anglo-Saxon, all such expressions as "The mind actually *grasps* its object," or "The object is *as* the mind thinks it," result only in making the significant word or phrase a target for the insistent question, "What does this *mean*?"

Now natural realism has difficulties enough without being obliged to acknowledge this one. There certainly is no satisfactory answer, but this is due, I suspect, not to the falsity of the theory, but to the meaninglessness of the question itself. The latter, indeed, implies that the realist is under obligation to reduce his conception of consciousness to lower and more intelligible terms,—but is there such obligation? We recognize similar questions about indubitable facts which have no answer: “How can a body move?” “How can a body exclude other bodies from the space it occupies?” “How can one event follow another?” “How can a thing change and yet remain the same?” They range from absurdities like “How is being made?” to investigations of empirical facts such as the falling of a stone. To them no answers can be given which do not contain the very ideas, motion, temporal succession, identity through difference, etc., that are under fire. Details and accessories of the process may be elucidated, but the essential character is implied throughout. Is it not possible, therefore, that the self-transcendent character of consciousness, its perceptive power, is fundamental? If so, the critical question is manifestly unwarranted, and the appropriate reply would be, “Why do you allege a suspicious mystery in what is a given fact? It is no more marvelous for a being to perceive something other than himself than for him to move to another place.”

Rebuttal of this defense will naturally assert either that self-transcendence is no such unmistakable fact as motion, or that a fact of experience may properly require explanation, however indubitable it is as a fact.

On the first point there will be little difficulty if we stop trying to imagine how self-transcendence *looks*; if we do not endeavor to objectify it as a ghostly photography or shooting out of rays from an extended picture in the brain. The fact itself, namely, that a conscious being knows the real nature of something not himself, that I and the object of my attention are different items in the universe, and that I know to some extent what my object really is, this is beyond denial. Its alternative is plainly false. The concept of consciousness may seem paradoxical to reflection, just as the concept of motion seemed teeming with paradoxes to some ancient Greeks, but the experience is as well assured in one case as in the other. The only reason for remarking it is that we occasionally find anti-realistic epistemology making statements suggestive of doubt about it. There is a natural tendency to relieve the tension of a paradox by denying the reality of the fact to which it refers. But a paradox is often only an imperfectly formed conception, and its

proper solution is then simply a more careful restatement. In the meantime the fact under consideration loses none of its respectability. And so it is with perception. It is a fact of my being, and its object is not in general itself or myself. This "external reference" can not be eliminated.

But the main difficulty does not lie here. What is ordinarily demanded is not evidence, but an explanation. The question is, "*How* can consciousness perceive its objects?" and this need not imply skepticism as to transcendence, but only a desire to know more about it.

The various epistemological theories, materialistic, idealistic, pragmatic, have all been attempts to understand the process by relating it to or identifying it with other processes. The first gives us scientific details of intermediary physical processes, but obviously this does not meet the difficulty. Idealism offers a curiously fascinating conception, but the transcendence in question is explained only by substituting for it another and equally puzzling transcendence. And lastly comes pragmatism, enveloped in so much smoke and noise of conflict as to make its battlefield seem the last place to approach with the hope of understanding anything clearly. So far, however, as its exposition deals explicitly with our difficulty—the difficulty remains. If the real distinctness of perceiver and perceived is acknowledged, then the consciousness relation does not seem identical with or explained by the functional utility of consciousness, however real and vital the latter may be; some element, quality or character of knowledge seems missing in the pragmatic account. And if the transcendence is denied, as it sometimes seems to be, the matter takes on so subjective a cast as to invite criticism on that ground. The net result for many free-lance students, it would be safe to say, is the conviction that transcendence, as a matter of abstract conception, remains uneliminated, unreduced, and equally paradoxical in all theories. Their explanations are important side-lights upon the fact, but the latter also shines essentially by its own light.

Natural realism insists upon this last proposition. There is an irreducible element of self-transcendence in perception. We seem on any theory to be left with this unexplained residuum of fact. To ask "how" it can be, is as useless as to ask how there can be a universe. There are indeed difficulties inherent in the conception, for example, the fact that the transcendence of the true perception seems not to differ psychologically from the spurious transcendence of the false one; or the strange difference between the transcendence of direct sensation and that of the symbols which make up so large

a part of our mental contents. These puzzles are numerous, perhaps insuperable, certainly inevitable for the adherent of realism, but they do not, I am sure, number among themselves the inability to answer the question "how?"

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REVIEWS AND ABSTRACTS OF LITERATURE

Studies in Psychopathology. BORIS SIDIS. Reprint from the *Boston Medical and Surgical Journal*, Vol. 156, Nos. 11-15, 1907.

The contentions of the paper are briefly as follows: What are described as phobias, as obsessions, as impulsions, as psychic epilepsy are best designated as recurrent psychomotor states, and these states are due to the existence of dissociated memories of past events, which, owing to their dissociation, accumulate energy insufficiently balanced or inhibited. The principle of accumulated nerve energy is a very general principle which promises to be of great importance.

The cases which Dr. Sidis adduces for his views are very interesting and deserve a brief recapitulation.

The first case, a young man with many obsessions, a dreamer in his boyhood, under the strain of examinations had to urinate every five minutes, at the risk of distressing bewilderment, unless he was especially absorbed by some interest. An insistent idea of an oozing out of his vitality leads to continual examinations of urine. Under fatigue, in close conversation with a male person, he gets, he does not know why, an "idiotically stupid" and disgusting idea of homosexual relations. He has a *folie du doute* about addressing letters, about putting out the gas, locking the door, without any general weakening of the sense of reality. A mysophobic fear of consumption, occasionally a feeling as if his will or his arm is paralyzed, and lately an idea of tearing out his eyes and having them crushed under his chair or a car, torture him, usually in flashes, at intervals. The urinary trouble and the oozing away of vitality and hesitancy of grasping a glass and the repeated trying of the doors were all traced to painful observations of such difficulties in the grandfather, when the patient was five years old; the abulia and feeling of palsy were traced to the sight of a paralyzed child at six, and the remembrance of his having feigned and felt the paralysis of his right hand when a man with a paralyzed hand entered the schoolroom; on that occasion the feeling of paralysis was so real that he fainted and was sick for a few days (at the age of six or seven). The homosexual tendencies were traced to an attempt at seduction by boys of sixteen when he was a little over eight years old. "This experience lapsed from his conscious memory, giving rise to the apparently unaccountable homosexual ideas at which he felt so much disgust." A green petticoat, the smell of a heated iron, the sight and feel of starched clothes excited him

sexually, also certain features of a woman—traced to a nurse he had up to his fifth year; his ideal of feminine beauty was traced to a child he knew at the age of seven. The mysophobia, the fear of infection, of death, of palpitation of the heart, were all traced to “dissociated subconscious experiences.” The inflamed eyes of his great-grandmother and the treatment of his own inflamed eyes with his great-grandmother’s eye-washes on one occasion, and stories of people with glassy eyes who can take the eyes out and have them “crushed and cracked by passing objects,” were found in a deep hypnoidal state to be at the bottom of the eye notion. “The dissociated subconscious experiences [having their origin far back in the dim regions of the patient’s child-life], like the moment-consciousness of low types, kept on recurring with the same or similar mental content and psychomotor reactions, giving rise to apparently unaccountable, irrational, insistent ideas and emotions, deeply affecting the patient’s self-consciousness.”

The second case was that of a shop boy of nineteen with enuresis and peculiar ague-like attacks. The spells were traced to his being forced to sleep a few nights in a dark, damp and cold cellar, and were even elicited by the mere mention of the words dark, damp, and cold—“Those magic words had the power to release the pent-up subconscious forces and throw the patient into convulsions of shakings and shiverings, with feeling of cold and chattering of the teeth. Thus the apparent epileptiform seizures, the insistent psychomotor states of seemingly unaccountable origin, were traced to dissociated systems of a disaggregated subconsciousness.” The third patient, with “recurrent states with trophic disturbances and epileptic attacks,” was a woman of sixty, with fear of becoming insane, attacks of functional amblyopia, severe headaches, swellings and rashes of the skin, coughing spells, attacks of helplessness and paralysis, occasional visual hallucinations and tinnitus, and an epileptiform convulsion when her throat was touched in a hypnoidal state; all these reactions could be traced to experiences of early childhood (seeing an insane woman at five, followed by frequent dreams and fears of hell and ghosts, effects of early overwork in teaching, then loss of a daughter through consumption, etc.). The fourth patient was a young Pole, unusually timid, with severe headaches and peculiar attacks of hyperesthesia and chilliness of extremities, fear of murderers and of funerals, and threatening dreams, traced to a scare by fire on a cold winter night (at four), and to a more pathological reaction at fire at eight, long rehearsed in dreams. “The experiences lapsed from his consciousness, but persisted in his subconsciousness, and found expression in his dream hallucinations, which appeared as real experiences to his subconsciousness. The content of the dreams is varied, largely depending on the sensory content of the total moment-consciousness, but it refers to the same dissociated systems of the patient’s child-life.” He had heard much of ghosts and ghouls, and to check a certain growth on his chest the cold hand of a dead woman had been put on his chest when he was about nine; he fainted. Shortly afterwards his parents were beaten by drunken soldiers and his little brother killed, and he escaped, poorly clad, into a cold, deserted barn; after that

the headaches came in full severity. The next case was one of a woman of thirty-eight, with continuous fears of mysterious powers in childhood (which later lapsed into subconsciousness), and later a recurrent feeling of sexual excitement in presence of strange men, based on an episode of similar excitement while sitting opposite a strange young man in a car at eighteen, an excitement which made her "all broke up and prostrated for several days. After a few days she recovered, and then the whole incident faded from her memory." But "it only lapsed from personal consciousness; it became dissociated and subconscious, to come once more to the surface of consciousness on subsequent favorable occasions."

The sixth case is also very interesting: A woman of thirty-five, of neurotic family, married three years, with attacks of paresthesia and paresis of the whole body, and with a profound abhorrence of women, who to her are impurity and filth (an exaggeration of early teaching in a convent brought out again by jealousy of her husband). This "gynophobia" led to many absurd protective reactions and demands on her husband, partly based on sexual symbolism. A search showed frightful dreams of the devil in childhood (once the "devil" actually threw her out of bed and the mattress after her). The paresthesias were picked up from a fall on the spine at twelve. A sexual assault at eighteen led to hysterical attacks; "she really never got fully over it, and the incident, though apparently but faintly present in her conscious memory, has remained active in her subconscious life."

The last case, a Russian of nervous stock, thirty-one years old, developed after a childhood of misery and oppression, and as a revolt over the contrast between the teaching of an ideal Providence and his own real misery. Hence "a struggle full of anguish and agony between a shattered personality and a newly forming self out of a chaotic disaggregated subconsciousness"; from the age of eighteen contrary and blasphemous thoughts in regard to God and filthy words and curses in his prayers, struggle with the evil ideas, which also appear as hypnagogic voices and in nightmares; several periods of hysterical paralysis, later replaced by episodes of sexual thoughts. Evil and "nonsense" thoughts give him no rest. In the street "dreams come to him," then he seems to wake up and does not remember anything; voices talk to him; he can not remember what they say, etc. He asks for help "without weakening my love for my people and my religion." "The patient's condition is the agony of a mortally wounded self struggling against the merciless onslaughts of a pitiless, nihilistic secondary self forming out of chaotic states of a disaggregated subconsciousness."

This is a brief summary of the cases in which Sidis arrived at an elucidation of the "otherwise unintelligible and strange symptoms" by reviving, with his method of hypnoidization, memories floating in the subconscious. In a number of the cases ventilation and reintegration of their memories led to recovery.

The theoretical portion of the paper is in part a reiteration of con-

ceptions developed in former publications of the writer (freely quoted as "I do not think that I shall be accused of plagiarism if I take the liberty of quoting, etc."). He insists that his method of hypnoidization is radically different from that of Breuer and Freud, and from Janet's method of distraction. It is the method of monotony; a condition of enforced quiet, in which the subject is asked to attend to some monotonous stimulus, such as reading or singing or the monotonous beats of a metronome. When the reading is over the patient, with his eyes shut, is asked to repeat what has been read and tell what comes into his mind during the reading or during the repetition or immediately after it, or simply the nature of ideas and images that have entered his mind. Or when the metronome is used and his respiration and pulse are found somewhat lowered, and he declares that he thinks of nothing in particular, he is asked to concentrate his attention on a subject closely relating to the symptoms of the malady or to the submerged subconscious states. Or he looks into a glass of water on a white background with a light shining through the contents of the glass; the metronome is set going and after a while the subject is asked to tell or write the stray ideas about a topic relating to his symptoms. The principle is the production of a subwaking state which may deepen into sleep or into hypnosis if pushed further. The data come up in bits and scraps, often under a constant struggle to maintain the highly unstable hypnoidal state. "The hypnoidal state may sometimes reproduce the original experience which, at first struggling up in a broken, distorted form and finally becoming synthetized, gives rise to a full attack. The symptoms of the malady turn out to be portions, bits and chips, of past experiences which have become dissociated, subconscious, giving rise to a disaggregated subconsciousness. The method of hypnoidization and the hypnoidal states induced by it enable us to trace the history and etiology of the symptoms and also to effect a synthesis and a cure by means of methods which will be described further on."

To understand Sidis we must follow his rather over-systematized conception concerning dissociated states. We meet a certain desire to keep in line his conception of neurone energy evolved in the days when the neurone-retraction theory furnished a pleasing figure of speech equally adapted to neurology and to psychology. From the view-point of general classification he calls the disorders described "recurrent psychomotor states," including insistent ideas, imperative concepts, persistent or periodically appearing emotional states, irresistible impulses, as well as the psychomotor attacks of an apparently epileptic character which may be designated as psychic epilepsy—all are seen in the insanities and still more often in the functional psychoses (when will it be possible to eradicate the artificial contrast between "insanity," "psychoses," and "neuroses"?); also irresistible, uncontrollable attacks appreciated as abnormal and all referable to some few fundamental states persistently present in the subconscious. He classifies them, according to content, into (1) conceptual or ideational (insistent metaphysical and religious puzzles); (2) ideo-motor (scruples about doing things on Sunday, or

other doubts about actions); (3) sensory (including all the insistent emotional states, depression, anxiety, phobias, pains, headaches, the anesthetics and hyperesthesias of hysteria—an original experience which has occurred during the process of dissociation, dissociated and recurring as an attack, with a tendency to form a new parasitic personality); (4) sensori-motor; and (5) motor (visceral and motor disorders, palsies, tremors, and states of psychic epilepsy and tics). According to form the insistent states may be disjointed or desultory (chaotic, without rhyme or reason, unintelligible, or reasoned out and systematized). The latter he refers to as frequently paranoidal.

The common feature, then, is the recurrence "so highly characteristic of the activity of dissociated subconscious states" or moments-consciousness. This fact of recurrence brings the subconscious activities under one perspective view, and biologically in line with the (reflex-like) lower mental states which respond to various stimuli of the external environment with the same amount and quality of sensori-motor reactions. Another feature, the vehemence of the dissociated states, is due to the lack of inhibition, and this leads him to see a special latent energy in these detached "moments" or psychophysical systems, which is further discussed in the last two divisions of the paper—"The Moment Threshold and Dynamogenesis" and "The Principle of Reserve Energy."

The first one of these divisions is a recapitulation of the theories of Sidis. The final chapter, "The Principle of Reserve Energy," is difficult to summarize owing to the not very clearly connected accumulation of many suggestive ideas. It should be read *in toto* by any one wishing to be fair to the author. I merely single out a few passages.

"All the remedial work and all the great work depend on the capacity of the nervous system to accumulate energy. In many cases the inhibitions become too heavy and the thresholds too high. We must loosen the grip of some of the inhibitions and lower the thresholds, thus utilizing a fresh supply of reserve energy."

Medicine must learn to do for the individual what wars and revolutions have done for nations. "By means of special qualitative stimuli and by the reduction of the inhibitions and of the moment-thresholds we are able to utilize energy out of the patient's reserve energy for the reestablishment of disturbed inner relations and dissociations."

This is an idea which has been developed in a different way by James, and also, with far less reference to the extraordinary, by Forel, in his instances of psychotherapeutics, with the help of opening new channels of occupations and interest. A comparison between Forel's cases¹ and the cases and theories of Sidis shows one how numerous are the ways of achieving restoration in disorders so ingeniously reduced to an apparently highly scientific principle by Sidis.

The closing chapter, with its many paradoxes, leaves one with a feeling of awe and wonder at the many things of which one might become the victim. The whole analysis does too little to inquire into the conditions

¹ P. 429 of the decennial volume of Clark University and in his lately translated work on hypnotism.

under which the dissociations take place. It assumes a more or less photographic memory, persisting in "moments or systems of consciousness" in the subconscious, and threatening the person with peculiar antics, all due to the special laws of the life of "neurone-aggregates." In this respect the descriptions which Janet, Jung, and others give of the complexes and special reactions to certain experiences appear much less artificial, more life-like, and more likely to induce those who shape the curricula of medical colleges to heed Sidis's justified criticism of medical education. The report of the cases would gain very much if, instead of the reiteration of the formula adopted in former writings, the writer would give a fuller idea of the process of inquiry and recovery in a few of the cases, with some dates giving the curve of developments a better setting, thus enabling the reader to see to what extent the mechanism of treatment, rather than incidental developments of time and adjustments or principles held by others without the dogmatic apparatus of somehow more or less anatomically segregated memories, brought the desired change. We may feel sure that the conservatism of the practical mind will cease to treat psychopathology with suspicion in the measure in which new observations are made accessible, and free not only of metaphysics of the past, but of metaneurology and premature and excessive systematization directing the attention to that which is as yet in the air and away from the events which had best be described with all the precision with which reports of experiments are written.

Sidis was one of the few who attacked the problems of mental pathology with untiring ingenuity and devotion to the broad teachings of his master William James. But they were given a premature stabilization through an overgrowth of neurological speculation concerning neurone-retraction, neurone-aggregates, neurone-energy, and the application of psychophysical formulas to the neurological units, the moment-threshold, the law of lowering and raising the threshold; and finally we come to that remarkable claim that relative inactivity and lack of inhibition, together with a process of passive absorption of energy by the floating disaggregated unit, lead to an explanation of one of the most difficult problems of psychopathology. Metaneurology and metaphysiology are as dangerous as metaphysics in this field, except, perhaps, in the hand and mind of their originator. Every investigator needs his own reinforcing tautology to satisfy nature's law of extravagance and the worker's pleasure of creation. Janet's analyses may appear too subtle and Freud's too simple; but they move in terms of the facts of observation, and if used with sufficient breadth of view of the clinical evolution of the disorders they are bound to lead us further. Whether Sidis's contributions will do the same will depend on the capacity of the reader to throw off the incrustations of neurologizing tautology and meet the facts in terms of the happenings which seem essential and open to test and experiment.

The observations of Sidis show that, possibly, the mechanism of submersion of painful and insufficiently digested experiences plays its

rôle in psychasthenia as well as in hysteria, and he outlines a plan of practical procedure of reaching submerged complexes which may readily compete with the psycho-analysis methods of Freud, and its modification with the association tests by Jung and the process of direct hypnoidization employed by Janet and others.

The nature and life of the "disaggregated" reactions, and the laws of their evolution and readjustment, have lately received many valuable contributions. The work of the Zürich school tends to add a great deal to a less dogmatic biology of the conditions and forms of after-effects of fairly well-defined experiences; and Sidis's own studies of the nature of posthypnotic hallucinations might tend to do away with much of the need and the burden of neurologizing subterfuges.

It is to be hoped that a fuller account of the actual experiments with the cases of "recurrent psychomotor states" will be published. It would be a valuable addition in this field of vigorous fermentation, and might easily be given so that others, with their individual working hypotheses, could receive direct stimulation and important hints through the very difference of method of attack. Whether Sidis's terminology will find acceptance remains to be seen. There is much dissatisfaction with the terms "hysteria" and "psychasthenia." A return to the in many ways harmless term "recurrent psychomotor states" might rouse the hunger for new solutions. Personally, I prefer the term "substitutive reactions" for the entire group of "psychoneurotic" reactions. But this is not the place to discuss the issue.

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Introduzione al pragmatismo. G. PAPINI. *Leonardo*, February, 1907. Pp. 26-37.

"Whoever should give a definition of pragmatism in a few words would do the most antipragmatic thing imaginable," nevertheless, in the course of a short article, Papini makes an exceptionally clear statement of what pragmatism, in his opinion, amounts to.

"You might say that pragmatism is nothing but a collection of methods for augmenting man's powers." This, however, includes too much. Still worse it is if one says that pragmatism is the theory that gives importance to conduct and substitutes the criterion of utility for that of truth in the choice of theories. There is truth in the statement, but it must be made clear in just what sense the terms conduct and utility are used. A list of such definitions as these would only give the impression "that pragmatism, instead of being something new, comprizes an indefinite number of old things, and that it is already accepted and practised, consciously or unconsciously, by all thinking men." But this would be a wrong impression, "for pragmatism does contain something new, and even though it be practised by many, it is not recognized and accepted by all."

Better than trying to define pragmatism, is to point out how it will affect the procedure of him who practises it. Pragmatism gives a prin-

ciple of selection in the choice of theories. He who uses it "will seek in all ways not to occupy himself with a large part of the classical problems of metaphysics (in particular with the universal and rational explanation of the whole)." Such problems he regards as entirely artificial. "In place of these he will be especially concerned with the methods and instruments of knowledge and of action"; and with their application to whatever specific problems are presented in our own experience. If now one asks how pragmatism differs from other types of philosophy, the answer is that it is not philosophy at all, in the sense of being a system of metaphysics, a theory of the world, a *Weltanschauung*. Pragmatism as such does not commit us to any one of the traditional alternatives in metaphysics. It may, however, eliminate all those alternatives by regarding such theories as "facts among other facts," capable, like them, of natural explanation. One may even say that pragmatism does not exist, but only more or less pragmatic theories, and more or less pragmatic thinkers.

Some of the critics of pragmatism define it as a slightly modified positivism—positivism in the older sense of a positive doctrine with agnostic leanings. Positivism and pragmatism do agree in ignoring a certain class of problems, but they have very different reasons for their indifference. Positivism has been disposed to say that such problems were too exalted for our mental powers; positivism asserts, therefore, a human impotence. Pragmatism finds these problems not too exalted, but too artificial, and indifference to them is a sign not of impotence, but of power. Another common feature is the emphasis laid by both on prediction. But while for positivism prediction is the practical application of a theory, it is for pragmatism a means of defining and interpreting the theory itself. This statement is equivalent to what Papini calls the definition of pragmatism most satisfactory to its friends, namely, "that the meaning of a theory consists entirely in the consequences which may be expected to follow from it." Positivism is only verbally antimetaphysical, while pragmatism (in the sense above explained) is essentially so.

As to the advantages which pragmatism offers, aside from the freedom from the incubus of tradition above insisted upon, there is, first, a saving of time through the elimination of artificial problems, and second, that mental stimulus which comes from the sense of control and from assisting at the formulation of something significant. And those to whom such a point of view may be expected to appeal are of three sorts: First, those characterized by virile energy, who demand that their concepts be effective instruments in the region of concrete realities; second, those who in a somewhat pessimistic way enjoy the effects of mutability; and third, those who in a spirit of independence and pride are unwilling to have their thinking determined for them by previous generations.

Thus Papini. The article is entitled an introduction, and does not pretend to offer a throughgoing account of the matter. We have a right to ask, however, just how the pragmatist, as Signor Papini conceives him, distinguishes between genuine and artificial problems. It is not enough

to declare that a problem is meaningless, without showing just how and why it is meaningless. Professor James has sought to answer this question, and Papini's article would be more effective if he had not so vivaciously ignored this really essential point. Besides, there may be other reasons for regarding a problem as unreal than the one that it makes no difference whether we solve it one way or another.

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JOURNALS AND NEW BOOKS

MIND. October, 1907. *M. Ribot's Theory of the Passions* (pp. 477-505): ALEXANDER F. SHAND.—An exposition and a criticism of Ribot's "Essai sur les passions." Ribot seeks to restore the term "passion" to usefulness. He restricts its meaning to denote not unstable, excited states, but relatively permanent attitudes like sensuality, patriotism, religion. Emotions are brief and unstable. Passion is a "fixed emotion," a "prolonged intellectualized emotion." Children and savages are incapable of passion. They live in a world of emotions. Ribot's distinction between passion and emotion can not be maintained. *The Idea of Development and its Application to History* (pp. 506-534): G. GALLOWAY.—The idea first championed by early Christian writers, most impressively by Herder and Hegel. Mill and his followers recognize no difference between historical and natural laws. Mill and Hegel present two well-defined types of historical philosophy. The chief problem is, in what sense and in what degree does the principle of continuity obtain in historical development? Historical process has flexibility within the limits of continuity. Such process is not necessarily progress. Ultimate values to be realized must be conceived in terms of persons. The crucial difficulty arises in connection with the idea of time. The effort to think out the notions implied in development leads into metaphysics. The ultimate realization of progress is matter not of demonstration, but of faith; but the faith is reasonably justified. *The Inductive Argument for Design* (pp. 535-548): D. H. MACGREGOR.—Three assertions can be made at the beginning. The design argument is not necessarily theological. It is idle to personify the forces of nature. We must exclude from the evidence all results which proceed from finite intelligences. The issue concerns the validity of a category. The evidence is greatest in amount where it is least convincing (biology), and hardly exists where it would be convincing (inorganic nature). Adaptation in biology is explained by Darwinism. More profitable is it to substitute human purposes for purpose and to recognize that they can be fulfilled. It must be shown, however, that they do not cancel each other. Emphasis on finite purposiveness requires proof of world's unity, unless the idea of teleology is to give way to idea of strife. The search should be for some "expression for" the joint activities of individuals, not some receptacle which literally in-

cludes them. *Professor Baillie's Idealistic Construction of Experience* (pp. 549-571): R. F. ALFRED HOERNLÉ. - Professor Baillie summons Hegelians back to Hegel. The book is curiously out of touch with modern thought. The word "experience" does not now lend itself to such a concept as "absolute experience," and the term "reality" is ambiguous. In the present volume it means "essence" rather than "existence." *Discussions: Realism and Infinite Divisibility* (pp. 572-578): GEORGE STUART FULLERTON. - The writer admits that "it sounds idealistic to speak of infinite divisibility as a system of substitutions." Can he restate his opinions on the matter in such a way as to make them unequivocally realistic? We know an objective and a subjective order of experience. We can ignore the subjective order, and study the objective order, overlooking its individual aspects. It may be absurd to speak of infinite divisibility of the subjective order, but not absurd to speak so of the objective order thus abstractly conceived. This is discrete realism. *Critical Notices*. F. C. S. Schiller, *Studies in Humanism*: G. F. Stout. Hastings Rashdall, *The Theory of Good and Evil*: James Seth. William James, *Pragmatism*: F. C. S. Schiller. *New Books. Philosophical periodicals. Note: The Subconscious Factors of Mental Process*, [erratum].

REVUE DE METAPHYSIQUE ET DE MORALE. September, 1907. *La prévision dans la théorie de la connaissance* (pp. 559-576): M. CALDERONI. - All knowledge looks to the future, and just as the syllogism is a form in which validity or invalidity of reasoning becomes manifest, whether or no we actually reason in syllogisms, so the truth or falsity of knowledge becomes manifest in its consequences. *De l'esprit classique dans la révolution française* (pp. 577-593): P. LACOMBE. - A criticism of Taine's concept of the Revolution period, and of abstract concepts of peoples in general. *Économie optimiste et économie scientifique* (pp. 596-619): CHARLES RIST. - Consequences of the theories of the distribution of wealth are that (1) attempts to act directly on the price of services affect production, but (2) an equalization of opportunities in the struggle for existence is beneficial. *Études critiques: L'évolution creatrice par Henri Bergson* (pp. 620-670): LOUIS WEBER. *Questions pratiques: Les syndicats de fonctionnaires et les transformations de la puissance publique* (pp. 671-698): C. BOUGLÉ. *Supplement: La philosophie dans les universités. Nécrologie. Livres nouveaux. Revues et périodiques. Agrégation de philosophie*.

Bakewell, Charles M. *Source Book in Ancient Philosophy*. New York: Charles Scribner's Sons. 1907. Pp. xii + 393.

Nietzsche, Friedrich. *Beyond Good and Evil*. Prelude to a philosophy of the future. Authorized translation, by Helen Zimmern. New York: The Macmillan Co. 1907. Pp. xv + 268. \$1.50 net.

Oosterheerdt, A. *Religion as Functional, Metaphysical, and Normative*. Reprinted from the *American Journal of Religious Psychology and Education*, Vol. II. 1907. Pp. 141-159.

- Schumann, F. *Bericht über den Zweiten Kongress für Experimentale Psychologie in Würzburg, April 1906.* Leipzig: Barth. 1907. Pp. xviii + 266. 9 M.
- Wundt, Max. *Intellectualismus in der Griechischen Ethik.* Leipzig: Engelmann. 1907. Pp. 103. 2.80 M.
- Wundt, Wilhelm. *System der Philosophie.* Dritte umgearbeitete Auflage. 2 Bde. Leipzig: Engelmann. 1907. Pp. xviii + 436, vi + 302.
- Yerkes, Robert M. *The Dancing Mouse.* The Animal Behavior Series: Volume I. New York: The Macmillan Co. 1907. Pp. ix + 290. \$1.25 net.

NOTES AND NEWS

THAT the theory of the dissociation of matter is gaining acceptance at Cambridge University is set forth by the *Athenæum* for September 28, as follows: "The conversion of Cambridge physicists to the theory of the dissociation of matter which they received with such scorn on its first appearance has for some time gone on steadily, and the memoir by Mr. P. D. Innes in the August *Proceedings* of the Royal Society seems to mark its apogee. Mr. Innes, a scholar of Trinity, who writes with the customary note of thanks for help from the Cavendish professor, states that 'the numerous theoretical and experimental investigations during the past few years of J. J. Thomson, Rutherford, Becquerel and others on the radioactive substances have demonstrated conclusively that the only theory which can satisfactorily account for the phenomena observed is that of atomic disintegration, a process which is apparently going on in several, if not in all, of the elements.' He further says that the expulsion of negatively charged particles from different ordinary metals when struck by the Röntgen rays seems 'due to the disintegration of the atom,' and that 'there is a definite energy of disintegration possessed by the atoms of an element.' He adds: 'That there is a great store of energy in the atom seems now beyond question, and if this reservoir could only become available, all our present conditions might be completely revolutionized.'"

THE following notice is from *Nature* for October 10: "A Greek pamphlet lately published at Athens (P. D. Sacellarius) under the title of 'Αἱ τῶν Lamarck καὶ Darwin θεωρίαι παρὰ τῷ Ἀριστοτέλει' gives an interesting account of various passages in the works of Aristotle which contain anticipations of modern observations and discoveries. The existence of a placenta in selachians and the sexual dimorphism of certain cephalopods were among the facts well known to the Greek philosopher, who also shows a considerable grasp of the phenomena of correlation, of the influence of external conditions on individual development, and of the rivalry between organisms in which the weakest goes to the wall. It is, however, rightly pointed out that Aristotle, though he had distinctly before his mind the principle of natural selection as propounded by

Empedocles, deliberately rejected that principle as a factor in organic evolution. A passage from the 'Physics,' frequently quoted and almost as frequently misinterpreted, shows conclusively that Aristotle, though no theist, held firmly to the view that the scheme of nature is purposeful and rational; but adaptations, in his opinion, came into existence ready-made, and not by degrees. The difference between this latter position and that of Darwin is clearly emphasized in the present pamphlet, but even here the force of the argument in the passage we allude to does not seem to have been fully realized."

THE Oxford University Press announces "Anthropological Essays, Presented to Edward Burnett Tylor in Honor of his Seventy-fifth Birthday, October 2, 1907," by H. Balfour, A. E. Crawley, D. J. Cunningham, L. R. Farnell, J. G. Frazer, A. C. Haddon, E. S. Hartland, A. Lang, R. R. Marett, C. S. Myers, J. L. Myers, C. H. Read, Sir J. Rhys, W. Ridgeway, W. H. R. Rivers, C. G. Seligmann and T. A. Joyce, N. W. Thomas, A. Thompson, E. Westermarck, with a bibliography by Barbara W. Freire-Marreco.

THE Oxford University Press will soon bring out "Studies in the Medicine of Ancient India: Part I. Osteology, or the Bones of the Human Body," by A. F. Rudolf Hoernlé. The author declares that the medical writers of India in the sixth century B. C. had accumulated a remarkable amount of information on anatomical matters. There was dissection of human bodies, but not, it appears, of animals.

AN English translation, by Katharine Royce, of a paper by Papini entitled "What Pragmatism is Like" appears in the October number of the *Popular Science Monthly*. This translation affords, perhaps, to the English reader the first opportunity to become acquainted at first-hand with the characteristic tendencies of the Italian school of pragmatists.

HOUGHTON, MIFFLIN & Co. announce the publication of the Rotch edition of Emanuel Swedenborg's Theological Works, in thirty-two volumes. This is the first complete edition of Swedenborg's theological writings and the first trade edition of his works published in this country.

PROFESSOR R. M. WENLEY, of the University of Michigan, has been elected to the Baldwin lectureship on religion for the year 1908-09.

L. E. EMERSON, Ph.D. (Harvard), has been appointed instructor in philosophy in the University of Michigan.

THE *Revue Générale des Sciences Psychiques*, edited by M. Ernest Bosc, is announced.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

IMAGINATION AND THOUGHT IN HUMAN KNOWLEDGE

OUR line of discussion may be suggested by asking: What is the function of imagination and thought in the process of cognition? We shall take for granted that whatever the differences may be by which imagining and thinking are distinguished, they are, as related to the problem of knowledge, processes in consciousness through which is reached a definition of an object which, apart from these processes, does not have the kind of reality specified by imagination and thought. We are not concerned with the question whether, for example, perception does not result in a truer knowledge than either, nor do we inquire whether thought may not be the cognitive faculty *par excellence*. We start from a position which all schools agree upon, namely, that in characteristic ways perception, imagination, and thought have a cognitive function, and that this consists in rendering their objects definite, concrete, and verifiable. But while, historically, views have alternated from the one extreme of perception or sensation to the other extreme of thought, scant courtesy has been given to the imagination as being concerned with the elucidation of those objects and problems with which knowledge in its many forms is engaged. We may, therefore, expect to find either that the cognitive function of the imagination has been imperfectly understood, or that its peculiar functions have been transferred and used under the better known terms of perception and thought. In either account, the result is the same. The tacit assumption is made that in its own rights, whatever its function may be in the fine arts, the imagination has no *cognitive* value.

If we consider the situation historically, this result becomes immediately obvious. Kant's philosophical relations make him particularly instructive here. The epistemological result of the "Critique of Pure Reason," on its negative side, is seen in limiting the field of knowledge to phenomena, to possible objects of consciousness. The content of the cognitive process Kant denies is any part

of the really existent world in its independence of the process in which knowledge takes place. The real, that is, stands in a universe of its own, it is a universe of the existent over against the universe of knowledge. The world, the soul, and God constitute such a universe. But, on the other hand, there is the disturbing fact of consciousness in its *cognitive* exercise. It is this fact which determines, for Kant, the philosophical dilemma which controls his epistemological inquiries. That dilemma is this: Either the universe is real, and then it is not known; or, the universe is known, and then it is not real. In the light of Kant's intellectualism, his conclusion affirms that reality can never become the content of a process of knowledge.

If we do not stop here, or take this as the sum of Kant's epistemological wisdom, as is sometimes done, we meet one of the most interesting questions of Kant's philosophy. We shall then refuse to consider this agnosticism as the final resting-place of his thinking. History, to a large extent, has taken it so, but that is because his successors, not excepting Hegel, have taken their cues from the first critique and have almost entirely ignored the third. For to bring the "Critique of Judgment" into line with the "Critique of Pure Reason," we may say that its problem was directly concerned with answering the question which had received, so far, only a negative determination. As we have intimated, the issue of the "Critique of Pure Reason" was not agnosticism; it was the *dilemma of agnosticism*. But when we so regard it, it is to be taken as a restatement of the same epistemological problem which, up to this point, had failed of positive solution. But if Kant is to be taken at all seriously, he *must* arrive at some *positive* statement as to the relation of consciousness and its "object," when the object is regarded as the determinant of knowledge, that is, as real. How, then, does Kant meet this requirement? He had shown that the forms of sensibility and the categories of understanding have only a transcendental application—they do not embody the modes and relations of things. The content of knowledge, therefore, is phenomena. But knowledge requires that its content be real. Now, the *impasse* of agnosticism can be overcome only by providing for the cognitive faculties, as they are held apart according to methodological requirements, some common root from which both may be derived. This is, in part, what Kant does, in more or less satisfactory fashion, in the "Critique of Judgment." This is also what he intimates in the introduction to the first critique when he declares that there are "two stems of human knowledge, *which perhaps may spring from a common root*, unknown to us, viz., sensibility and understanding, objects to be given by the former and

thought by the latter.”¹ In this way feeling finds a place in the Kantian scheme. For purposiveness in nature and freedom in esthetic contemplation are both forms in which feeling expresses itself in presence of its appropriate objects. Feeling, that is to say, is essentially a *Werth-urtheil*—a *judgment* of value. But judgment implies an object. What, then, is the object which determines those forms of consciousness which have their source in the feeling life of man? The object, Kant answers, which, not given either in sensibility or in understanding, exists in and for the imagination. The imagination is the faculty to which is given those really existent objects concerning which the rational faculties give us only the semblance of knowledge (*Schein*). Here, then, notwithstanding the intellectual predilections of the “Critical Philosophy,” we are brought to the recognition of imagination as a faculty which, in the effort to determine the nature of reality, the cognitive function of consciousness comes to its most satisfactory and complete expression. But so long as the “Critique of Pure Reason” is taken as the final account of Kant’s epistemological inquiries, and the “Critique of Judgment” is regarded as performing merely a mediating function—and, as it were, as an afterthought—between the understanding and the will, so long will the intellectualist cast of Kant’s thinking obscure the real value, within the system, of imagination in its relation to human knowledge.

Let us now look at the problem of knowledge from another standpoint. Locke started out with the definition of knowledge as the “perception of the connection and agreement or disagreement and repugnancy of any of our ideas.”² Ideas he defined as a term which stands for “whatever is the object of the understanding when a man thinks.”³ These definitions formed, without question, the starting-points of Hume’s philosophy of knowledge. Knowledge, Hume remarks, is either certain or probable. It is the former when the ideas between which the relations obtain are both present at the time of passing the cognitive judgment. Such, for example, are judgments of quantity and number. When knowledge is probable, one of the compared terms only is present in consciousness and the other is supplied from experience by the exercise of memory. Here falls all the knowledge we have of a metaphysical kind: of the world, the self, and God. The interest of every philosopher is, of course, in this latter class of knowledge, and consequently the problem for Hume assumes the form of an inquiry

¹ “Critique of Pure Reason” (Max Müller’s translation), p. 12. Italics mine.

² “Essay concerning Human Understanding,” Bk. IV., Ch. I., § 2.

³ *Ibid.*, Bk. I., Ch. I., § 8.

into the function of judgment in cognition. The functions of judgment, we are reminded, are analysis and synthesis. The relation between knowledge and its object involves a synthesis, and it is to an examination of the synthetic process that the task of Hume in the last resort is confined. In estimating what he has to say here, it is necessary to add, as another presupposition of his whole philosophy, the *dictum* of Berkeley that "like can be compared only with like": ideas can be compared only with ideas. It is, consequently, because arithmetic, geometry, and algebra are mere ideas, and do not involve any question as to the reality of space and time, that, whether these latter are real or not, mathematics gives us the highest certainty of which the human mind is capable. But, Hume argues, reality has always been taken as the determinant and not merely as the resultant of knowledge.⁴ The only question to be debated, therefore, is whether we are in a position to know what it is. Now we may remark that, as in Kant's case, the skepticism of Hume has been allowed, historically, to overshadow the real point of his epistemological contention. Thus one writer holds, notwithstanding his appreciation of Hume's value in epistemology, that "Hume can not, indeed, be regarded as a serious, though skeptical and critical, inquirer after a doctrine of cognition, in the fashion of a Descartes or a Kant, or even of his own more immediate predecessor Locke."⁵ The "Prolegomena" of Kant is the only considerable work which has stated the Humian position with an adequate regard to the motives which operated to define it. The agnostic outcome, it is there shown, is the consequence of a serious investigation by Hume of the *type of judgments* which enters into all our knowledge regarded as real. If it is true, as Hume maintains, that the causal argument is the one instrument by which the human understanding is, or is thought to be, able to extend its knowledge beyond the immediacy of its ideas so that it shall implicate the real, then an examination of this argument, if systematically and critically carried out, will serve as the foundation of a statement concerning the scope and validity of the metaphysical use of the cognitive faculties. This, as we have seen, is *the* epistemological question. It is hardly an accurate judgment, therefore, that gives to Hume a place in the development of epistemological theory at all inferior to that of Kant on account of his lack of appreciation of the problem of knowledge, or of the way in which that problem is defined for solution.

⁴ We make this statement advisedly, for it seems to us a misunderstanding of both Berkeley and Hume to presume that they denied the existence of a world of fact which is not to be identified with the mere psychological processes in the knowing mind. Cf. Hume, "Treatise," Bk. I., Pt. 4, § 2.

⁵ Ladd, "Philosophy of Knowledge," p. 68.

What Hume's answer was may, in its main outlines, be shortly stated, and it must, of course, rest upon its own merits. In general, it is the assertion that certain results may be expected to follow from certain presented data when experience has furnished us with examples of the kind and amount on which expectation feels confident in relying. Confident expectation in regard to a particular sequence of events bases itself upon experience, and is only another name for the tendency of the human mind to pass from one object to another with which it has been most frequently associated. It is the same fact which he denominates by the term belief. Belief, for example, that the sun will rise to-morrow simply means that it would contravene the law of parsimony to pass from the starting-point of knowledge to any other idea than the one which is actually predicated of the subject of the judgment. Belief is the subjective result of the law of inertia applied to the field of consciousness. I believe that the fire will burn, not because my belief makes any difference to the qualities of fire, but because it would be difficult, if not impossible, for me, in view of my total experience with fire, to think anything else. This is one side of Hume's epistemology. It corresponds to the position Kant had reached at the end of his first critique. But we should do Hume no less injustice than we have seen we do Kant if we were to stop here. For, again, what is required of every theory of knowledge is to show the relation of cognition to that which is the determinant of knowledge. Now what Hume attempts to do in response to this demand is to show that if we persist in taking reality as a given, fixed, and static universe we involve ourselves in skepticism. That is to say, to take the universe as having an independent reality, and to consider consciousness as falling outside that universe, is to make impossible any judgment of reality, and to reduce all attempts at knowledge to a mere flow of ideas, under the laws of the association of ideas. As a criticism, Hume's skepticism has done a work for all time. But Hume's theory of knowledge has other implications. Knowledge, for him, is a self-determining and self-limiting process. Through belief there gets built up an organism of knowledge which is a determining factor in every judgment of reality. It is, consequently, in and through the process of knowing that the objective factor which is present in all knowledge comes to definition.

When we turn to the instrumental aspect of the theory, Hume's great fault lies in the fact that he is unequivocally clear. It is the imagination which, according to him, reinstates the controlling factors of knowledge. It is the source of those ideals in relation to which the progressive organization of knowledge becomes possible.

Thence Hume sets out to show that none of the common beliefs are lost, although they have another foundation and meaning than is commonly supposed. But we are not here concerned with the evaluation of the theory. For our purpose, it is sufficient to find in its basis in the imagination the reason why Hume's theory has been pretty generally ignored in the history of epistemology. It is, we think, significant that the denials of the value of Hume's "attempt to introduce the experimental method of reasoning into moral (theoretical) subjects" are based for the most part on extra-psychological or extra-epistemological grounds. But Hume is a thinker who can not be overcome by pointing out flaws; you must storm the capital, to use his own figure, if capitulation is to follow. For him the imagination stands as the indispensable instrument of knowledge, and he refuses to give it an intellectual bath in which are washed away its sensuous affiliations. The doctrine of knowledge can not be understood, as Hume understands it, apart from the free play of ideas which is characteristic of imagination. But, perhaps, for this very reason he is the one philosopher of first rank whose influence on the development of epistemological theory is so insignificant that he might have had no doctrine of knowledge at all.

Were it not for recent philosophical developments, we might end this paper here. Current discussion, however, has made it obvious that our present philosophical differences are, in large measure, due to the emphasis which, consciously or unconsciously, has been given by our modern empiricists to the neglected factor of the historical theories of cognition. In the light of the situation historically defined in the development from Locke to Hume, this is implied in the criticism of those who maintain that the logical and psychological problems of knowledge have no points in common through which the conclusions in the one field may be equated with those reached in the other. No amount or degree of accuracy in the description of the process of knowledge, it is held, will enable one to determine the question of its truth, for this is not a question of the process, but of the content which the cognitive process implicates. Or, as one writer states, "the truth of a proposition is a function of its meaning, the content which it asserts, not of its character as a psychic event or process."⁶ The distinction which is pointed out is that of the formal and the material principles of knowledge, the distinction between the *that* and the *what* of cognition.⁷ The fact, the meaning, the con-

⁶ Taylor, "Truth and Practise," *Philosophical Review*, Vol. XIV., p. 267.

⁷ Cf. Taylor's view of psychology in his "Elements of Metaphysics," pp. 294-310, and such statements as the following, which occur throughout his work: "Hence knowledge and will, involving as they do for us discrepancy between the what and the that of experience, are not wholly satisfactory terms by which to characterize the life of the absolute," p. 61; cf. pp. 409 ff.

tent is what it is apart from the form of its apprehension. But there is no question of truth or falsehood in the absence of judgment. To be true or false—distinctions which fall within the field of knowledge—the fact must be judged. But judging is a psychical process in and through which knowledge in all its degrees is reached. So long, therefore, as we hold ourselves to a consideration of the epistemological problem, and unless we deny or quite skeptically limit the validity of knowledge, some such statement as this must be admitted: That reality which is timeless must become the content of a process which takes place in time in such wise that that is what the process means. It is a problem, in other words, which concerns the implication of reality in the cognitive facts and relations of consciousness. From the one point of view we are confronted with this question: How can that which, *ex hypothesi*, is independent of all conscious, that is, temporal, experience ever become known since knowledge is, whatever else or more it may be, always a process in time? From the other standpoint we should have to ask: How can that be real, that is, objective and universal, which is the construct of finite conscious thinking? But, however the question comes to be formulated, if there is to be *knowledge*, the real must come within the comprehension of the finite mind, and the constructive thinking—we use the term in its broadest significance—of man must lead him to a true apprehension of the object as the terminus of his cognitive endeavor.

Now, without unnecessary detail, we may point out that each school—the intellectualist and the empiricist—uses, within its own sphere, a different cognitive instrument for the solution of the problem of knowledge. In the one, thought—purified and refined from the imperfections of its psychogenetic ancestry—is so conceived that, in the words of Bradley, it “must correspond to a determinate being which it can not be said to make.”⁸ Thought envisages what it does not construct. This is the copy theory, a theory which limits the cognitive function of thinking to taking up with the eternal thought in such wise that while absolute knowledge and absolute reality are one and the same or, as is sometimes said, inseparable, our human knowledge can never, as human, reach that stage of perfection in which it embraces the self-consistency which characterizes the object of its thought. The real, or supposed, difficulties of an idealistic epistemology have prepared the way for the consideration of other methods of stating and solving the problem of knowledge. Hence instead of leveling up to the heights of pure thought, we are asked to level down to the plane of our common consciousness with its

⁸ “On Truth and Practise,” *Mind*, N. S., Vol. XIII., p. 311.

regard for the relationships in which one experience takes account of other experiences in what is called the "stream of thought." And when it is asked how it is possible for the finite to transcend its own finite experience, there is emphasized, as the peculiar cognitive instrument of the empirical epistemology, what we have called the "neglected factor" of the historical theories of knowledge. What thought is supposed to do for the other view, imagination is called upon to do for this. Humanism, pragmatism, radical empiricism, or by what other name this general movement may be designated, finds its epistemological significance in its reinstatement of the cognitive function of imagination.

A remark or two on each of these points will serve to emphasize this brief statement, and we begin with thought as being the more familiar standpoint. Thought, quite commonly, is taken as the instrument by which the character of the content of knowledge is made explicit. In this broad sense, thinking enters into all our scientific and philosophical pursuits. The organized body of knowledge, whether scientific or philosophical, in this point of view exists, as cognition, as the result of the application of the laws of thought to the data given, immediately or mediately, in experience. But in so far as in science the method is inductive, it details the various qualities which reality has within the limits of human knowledge. This limitation, however, prevents its truth being taken as the same with ultimate reality. This is the meaning of Bradley's arraignment of our scientific knowledge of the world of things and of minds. Science does not raise any question concerning the self-consistency of its conclusions, or of the concepts or theories it uses in explaining its data. It is this question which determines the analytical and critical exercise of thought in the field of philosophy. The aim of philosophy, we are told, is to think things, not in their concrete individuality, but in their internal self-consistency. Reality exists for thought as a world which must not contradict itself. The ideal toward which the whole effort is directed is an adequate comprehension of that which exists in a harmonious, complete, and self-consistent unity, a unity which thinking does not make, and which thinking can never completely realize without losing its distinctive character as thought. It is • because thought falls behind the completeness and consistency of reality that its cognitive career is secure; its purpose is, however, to bring knowledge more and more completely into harmony with the ultimately real which is the metaphysical, not merely the logical, prius of all cognition.

The empirical theory of knowledge not only affirms that the con-

cepts, axioms, etc., with which it works—that is to say, the entire cognitive apparatus—have been evolved in the course of experience, but that experience is one with reality in the sense that the organization of experience is a process in which reality becomes qualified. This is to say that knowledge molds and modifies the structure through which it operates, and that the system of truth does not fall without, but within, the sphere of what really exists. Knowledge, in other words, is a part and function of reality. This being the case, the prime question here, as in the other theory, relates to the logic of the process in which knowledge comes to explicit self-expression. It must be admitted that not a little excuse is to be found, in the practise of the advocates of this theory, for the iteration of its opponents that *this* problem has not been and is not fairly met by a descriptive history of the process of knowledge.⁹ You can not, say they, settle the logical inquiry by a psychological excursus. Logic, we are told, concerns itself with the instrumentalities of knowledge, not with the relations that exist within the knowing process. What these relations are may be ascertained by the methods of a scientific psychology; to ascertain what are the instruments by which these relations become fixed, and how they function in the growing organism of knowledge, requires a reflective consideration of the facts as they are revealed to introspective science. It is to direct attention to this aspect of the problem that the following remarks are offered.

What we saw in the other theory is true of all theories of cognition, namely, that knowledge proceeds under the stimulus of an ideal. Where does empiricism find its ideal which is directive of knowledge, and how can this ideal be transcendent so as to provide conditions for an unlimited future of cognitive effort? The ideal, for this theory, we are told, originates and functions within the cognitive experience itself, and so controls the processes which issue in judgments of reality. All that the theory, at this point, seems interested to maintain is that the ideal is both subjective and present to the process which it controls, and that this fact does not interfere with, but is necessary to, its character as the mediator of a wider systematization of knowledge. The only question of importance is, how this is possible, how an inner unity of meaning comes to belong to the organism of human knowledge.

The point of this paper, as it bears upon this problem, is to suggest that, in the present alignment of philosophical parties, there is no other available instrument for this purpose than imagination.

⁹ Of the writers on this side the question, Dewey has most clearly grasped the logical problems and has made the most successful effort to meet them.

The difficulty of taking this suggestion *au sérieux* is due to the fact that, because the imagination has figured in the history of thought in only a one-sided way, we have not got beyond considering it as the center of a psychological theory which states the conditions under which our ideas, irrespective of their truth, are brought into relations with one another and with perceptions beyond which, as psychologists, we are unable to go. No one wishes to dispute the fact of association, or that association takes place in regular ways, the statements of which are called its "laws." But what one does meet with the denial of is that in providing material for thought the imagination is capable, through the laws of association, of validating that material and judging it to be "true." This is quite intelligible if we remember that those who advance it are describing the condition of the object as it must exist, if it is to exist at all, on the supposition that humanism is only a *psychological* theory of knowledge.¹⁰ Nor need much credit be given to the critics of humanism for their perspicacity in this regard, nor need great offense be taken if they press the issue, for the pragmatic Hume occupies the same ground in refuting the "ancient philosophy."¹¹ It is, he says, because the ancient philosophers allowed themselves to be guided in their determinations of reality by the natural relations which are established through the association of ideas that they failed to throw light upon the connection of our ideas and things. But, as he goes on to say, the imagination is the source of other principles than those by which one idea naturally suggests another. We must, he asserts, "distinguish in the imagination betwixt the principles which are permanent, irresistible, and universal; such as the customary transition from causes to effects, and from effects to causes: And the principles, which are changeable, weak, and irregular . . . The former are the foundations of all our thoughts and actions, so that upon their removal human nature must immediately perish and go to ruin. The latter are neither unavoidable to mankind, nor necessary, nor so much as useful in the conduct of life. . . . For this reason the former are received by philosophy, and the latter rejected."¹² The importance of this statement is that it lends weight to the demand, which we are seeking to emphasize, for an explicit consideration of the *logical* functions of the imagination. This it may do if we bear in mind that the "permanent, irresistible, and universal"

¹⁰ Since this was written, Schiller's "Studies in Humanism" has appeared, and it is there denied that pragmatism is anything more than an account of human knowing.

¹¹ "Treatise," Bk. I., Pt. 4, § 3.

¹² *Ibid.*, Bk. I., Pt. 4, § 4.

principles which, as Hume says, are the foundation of philosophy, those, namely, which are found typically in the causal relation, are those with which are connected the epistemological discussions of the "Treatise of Human Nature." It would, however, lead us too far to inquire how the distinction alluded to becomes operative in Hume's philosophy. It is sufficient if it serves to illustrate the possibility of conceiving the imagination in such a way that it may serve as an instrument of "truth." Without losing its pragmatic character, humanism can not rely upon thought which, independently of practical considerations, aims to square our beliefs with facts. If, however, facts are to be made to square with beliefs, some instrument is yet to be named which, while remaining amenable to the principles of human nature, is, at the same time, able to construe experience so that it shall embody the truth of things. Knowledge and reality must each involve the other. Pragmatism has not yet come to terms with its problem historically defined, and we still await from the hands of a modern Hume a determination of the logical functions of imagination.¹³

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PSYCHOLOGY AT TWO INTERNATIONAL SCIENTIFIC CONGRESSES

THE seventh international congress of physiologists was held in Heidelberg, August 13-16, and the first international congress of psychiatry, neurology, psychology, and the nursing of the insane was held in Amsterdam, September 2-7. In both congresses topics of interest to psychologists were discussed, but the number of purely psychological papers was very small. Some of the papers were of interest to those who investigate the functions of the sense organs and the cerebrum, most were of importance only to those who are chiefly concerned with the physiological and clinical study of the central nervous system.

In the physiological congress there was not a special section for papers of psychological bearing. The special section of psychophysics at the Amsterdam congress was concerned with clinico-psychology more than with normal psychology, and in this section the only professional psychologist of note on the program was Pro-

¹³ Since this was written report has come of a paper by Mr. Schiller before the Aristotelian Society on "Humism and Humanism." Details are too meager to enable us to say whether our question has been adequately, or at all, considered.

fessor Jodl, of Vienna. Professor Janet, of Paris, another professor of psychology, read before the section of neurology and psychiatry.

In the general sessions of the congress of psychiatry, etc., two papers dealt with matters of some general psychological interest, that of Professor von Bechterew, of St. Petersburg, "*Recherches objectives sur l'activité psychique*," and that of Ziehen, of Berlin, "*Methoden der Intelligenzprüfung*." The former considered the question whether or not psychology is a science more than the *recherches objectives*, and concluded, as have many others, that the true method of psychology is introspection, that as such it is a part of philosophy and can not be a science. Experimental psychology, on the other hand, is concerned only with associations and reactions to situations, and it is a science. The scientific psychology may be divided into a number of different fields according to the material with which one works, and we have, therefore, the psychology of the normal adult, of the child, of the abnormal, of different peoples, etc.

Professor Ziehen's paper is of more interest to psychologists, for in it he dealt to a large extent with the examination of the insane and strongly urged all psychiatrists to do more extensive and more accurate work in examining patients along psychological lines. He cited some cases that he had been able to differentiate by most careful mental examinations, and used these results as examples of what more accurate examination and analysis will do.

In the special sessions devoted to papers on psychology and psychophysics the following general topics were considered: the present state of the James-Lange theory of the emotions; the psychology of puberty; the difference between perception and idea; the secondary function. For these discussions, referees or *rapporteurs* were appointed respectively as follows: P. Sollier (Brussels); Marro (Turin); Jodl (Vienna) and Mercier (London); Gross (Graz). 'In place of Neiser, Sommer (Giessen) discussed the subject, "The Past of the Psychopath."

It is unfortunate that Sollier should have been chosen to consider the James-Lange theory of the emotions in view of the fact that he had so recently published in full his views on the subject. In his paper before the section Sollier presented nothing that is not to be found in his book, "*La mécanique des émotions*."¹ It would have been more profitable to have had some one discuss Sollier's position, which to the present writer seems no more tenable than that of James and Lange.

In the discussion of the difference between perception and idea,

¹ See review in this JOURNAL, Vol. IV., page 109.

Mercier's paper was read, in his absence, by Dr. Conolly Norman. A perception differs, Mercier holds, from an idea or image in that the former contains some presentation of sense, there is an objectifying of the perceived thing, and there is a more vivid nucleus. The time it takes to invest a presented object with certain qualities, *e. g.*, a cushion with the quality of softness, determines whether we shall consider the quality a perception or an image. If the attribution is instantaneous it is a perception. Jodl considered the descriptive and genetic differences between idea and perception, and then concluded that we can not always differentiate the things in these ways. He considered the subject from the standpoint of scientific psychology and of every-day life and concluded that the solution of the problem was not in the field of individual psychology, but that the differences could be thoroughly appreciated only from a careful study of the social self. How this is to be done the speaker did not make clear, but doubtless more light will be given in the full account of the paper in the congress transactions.

The papers in the sectional meetings other than those mentioned above were not of sufficient importance to warrant more than mention of the titles: Gutzmann (Berlin), "Ueber Hören und Verstehen"; Lechner (Kolosvar, Hungary), "Ueber negative Sinnes-täuschungen"; Francke (Hague), "Statistisch-sexuelle Traumdifferenzen"; Roemer (Holland), "Verhältnis zwischen Mondalter und Sexualität"; Schuyten (Antwerp), "Problemes de pédologie"; Albada (Holland), "Theorie zur Erklärung psychologischer Probleme"; Joire (Paris), "Sur une force nerveuse exteriorée"; Bychowsky (Warsaw), "Reflex-studien"; de Boer (Amsterdam), "Association gegensätzlicher Begriffe"; Novoa Santos (Spain), "Temps reflex et temps conscient."

At the physiological congress only two papers of special interest to experimental psychologists were presented. These are papers dealing with method rather than with results, and are therefore the more valuable. Professor Zwaardemaker, who is best known to psychologists by his work on smell sensations, described his newly constructed room for sound experiments and showed models and lantern slides of the construction. The room is absolutely still, and is probably the most successfully built room for sound investigations. A full description is to be found in a forthcoming number of *Science*, to which the reader is referred for information.

The second paper of interest to psychologists was that of Gotch (London), who described and illustrated the use of an instrument for testing retinal excitability. The instrument is a modified form of the spinthariscopes. The ordinary form of spinthariscopes was changed so that it has three adjustments, one for increasing or de-

creasing the size of the field, one for removing the radium toward or away from the center of the field, and a third for moving a screen near or away from the radium. With a given adjustment the instrument has constancy of illumination-intensity, but there is an abrupt and momentary excitation. With the various adjustments there is the possibility of limiting the intensity so as to have the minimal or threshold value. Some of the advantages of the instrument are that it is portable and small, easily used and understood. With it Gotch demonstrated at the congress the increased excitability in the dark adapted eye of certain portions of the retina, an increased excitability of the nasal as compared with the temporal part of the retina, the effect of illuminating one eye in decreasing the excitability of the fovea, and the remarkable degree to which the excitability of one eye is temporarily raised by illuminating the other eye.

The fact that so few papers of a psychological nature were offered at the physiological congress is explained by the condition of membership, that only professional physiologists could take part, and because the modern development of physiology has been along chemical lines. The congress of psychiatry and psychology was intended to be for psychologists as well as for neurologists and psychiatrists, but there were registered less than fifteen psychologists out of a total membership of eight hundred. This is the more remarkable since there was a special section devoted to psychology and psychophysics. The paucity of papers of interest to psychologists is due to the lack of immediate interest of psychologists in abnormal psychology on the one hand, and on the other hand to the fact that the usual psychology of the clinic differs from the psychology of the universities. It is true that psychologists must depend upon themselves for the solution of problems of normal psychology, the problems of special interest to themselves. Some hold, unfortunately, I believe, that the only material that will be advantageously used in solving these problems is the normal adult mind, but this view is held largely because they know nothing of the abnormal. I have expressed the opinion, and still hold it to be the true one, that the specially trained psychologist will find new points of view as well as new facts in the study of abnormal or clinical material, and that it is unfortunate so few psychologists are willing to ally themselves with the psychiatrists. Normal psychology will be advanced from studies of the insane and other abnormal peoples only by having studies on these classes conducted by the psychologist who has the normal as his specific goal. The value of the abnormal material will, however, not be understood from a far-

off look, and especially from a view of the work of others who are interested exclusively in a different set of problems.

The psychiatrists are aware of the importance to them of the careful analysis of cases by the newer psychological methods, and the clinics are being opened to properly trained psychologists wherever they present themselves. It must be kept in mind, for a proper appreciation of much of the so-called abnormal psychology, that the clinician is interested in psychology primarily in so far as it gives him some material for the proper understanding of his cases, and he is interested in the same way and to just the same degree in microscopical studies of nerve cells, which he understands can never really explain the presence or absence of a particular idea or set of ideas. The interest of the physician being, therefore, in cases or in disease types, in the care and cure of individuals, necessarily produces a type of abnormal psychology that many academic psychologists are unwilling to admit to be psychology. Perhaps this is rightly so. On the other hand, the advantages to normal psychology will only be felt after psychologists have taken opportunities of investigating the abnormal and of determining in the abnormal the things that are really helpful in understanding the normal. In other words, normal psychology is not the goal of the clinician, and psychologists may not expect much light on the problems of normal mental life from studies by physicians. However adequately trained in normal psychology he may be, the physician desires to understand the abnormal more than make contributions to normal psychology.

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SUB SPECIE ÆTERNITATIS

THAT every writer on metaphysics should conceive himself as stating his problem under the form of eternity is, I suppose, perfectly natural. It is equally natural that in the opinions of others he does nothing of the sort, and when a later generation can contemplate his performances, it is evident enough that not the form of eternity, but a very concrete situation and the specific requirements of a given historical period controlled his conclusions in case these were effective and significant. And this is true, it can be argued, in proportion as the individual in question is a really great thinker and a great personality, a man whose thought is vital and effective, because by the gift of instinctive discrimination he ignores imaginary problems, and struggles, however crudely and untech-

nically, with real ones. Whatever else fruitful philosophy may be, it is, at least, an effort to straighten out a situation in which difficulties are directly felt. I do not speak of those difficulties which are the professional outfit of people who make it their business to talk about them. These, too, were once genuine problems of human experience, they were urgent in normal experience itself, not merely implicit in a system of inherited definitions. Genuine problems exist because of contradictions which have a pang in them. The pang is finally assuaged, not because the problem was ever solved, but because it ceased to be a matter of much concern. Meanwhile an impressive series of lovers of wisdom analyze and manipulate the defunct problem far more expertly than the authors of it were able to do; only, just as for Aristotle a hand from which the life had gone out was no longer a hand, so the problem from which the pang has gone out is no longer a genuine problem of experience. Social and political conditions, industry, literature, science, ethical ideas become so changed that the wonder is a problem ever recurs. Yet no conviction is more ingrained than that the problems of philosophy are indefinitely persistent. This, it would seem, is the ground of their claim to an especial dignity. Other problems get solved and relegated to the history of their science; not so metaphysical problems. How could a problem *sub specie aeternitatis* become a historical episode by being solved like any empirical difficulty? A problem persists, to be sure, as long as its presuppositions are retained and the outcome of these premises is in striking contrast to the facts to which that outcome is supposed to apply. The very spirit of philosophy should, however, keep us alive to the fact that we have the same right and duty to find our problems in the contradictions of our world and our experience that Augustine had to perceive his problems in the social tragedy of his day.

If a large part of the system of ideas known as Augustinian was invented in the fifth century to prove the necessity to man of the official ministrations of the church, it was adapted in the sixteenth and seventeenth centuries to prove the futility of those ministrations. How should the sacraments play any part in a man's salvation if this is a matter decided by the direct election of God? How should some words spoken by a priest control the action of grace? For precisely opposite reasons to those which influenced Augustine, the Augustinian determinism became a dogma of the Reformation; in the one case determinism to prove the necessity of sacraments, in the other to prove the futility of sacraments. This, of course, was an instance where the inconsistencies of a doctrine made it applicable to historical periods with opposite requirements. The

dispute over universals in the twelfth century, and again in the fourteenth century, shows us a doctrine first suppressed because it was hostile to the dominant conception of society and its needs, and then victorious because the political and social situation characterized by the breaking up of the medieval world could use such a point of view as nominalism. If nominalism were true, then it would follow that the church was but the aggregate of its members, a conception intolerable to a period in which social and metaphysical thinking started with the idea of "the whole," and with very little application to a world where nationality had hardly begun to emerge. Again, two centuries later, nominalism was evidently true because it alone could legitimize the local independence of cities, and the rights of individual citizens, and recognize the working of the principle of nationality. The triumph of realism was incorporated in St. Bernard, who stood for the dominant ideals of his age. And Occam was writing in the camp of the Franciscan opposition, as an ally of Ludwig of Bavaria. In both cases it was in the interest of the hierarchy to deny reality to individuals, but in the fourteenth century it was coming to be of consequence to society to insist upon individuals.

Of course, I do not mean to claim that all effective philosophy must be produced under such conditions of storm and stress as those I have referred to. But such cases point out that over and over again metaphysical questions have had a perfectly definite bearing upon genuine social problems, and that however crudely the problems of metaphysics were discussed, they were no idle problems. Somehow, it seems as though the metaphysics of to-day had not this significance. Metaphysics seems, for the most part, to find its problems in a group of conceptions formulated in the seventeenth and eighteenth centuries and long since carried to logical completion in neo-Kantianism. There is much disposition to minimize Kant, but no great attempt to unload his chief presupposition, his conception of consciousness, and while this is retained the problems of parallelism, interaction, and the mystery of knowledge are bound to be drearily persistent. If we call the crude, urgent, immediate contradictions "primary problems" and the contradictions between traditional and finished concepts, or between these and contemporaneous experience, "secondary problems," we shall have a pair of terms which, although a little extreme and abrupt in the classification which they effect, nevertheless indicate well enough the contrast to which I call attention. Of course, primary problems, in so far as they are reflectively stated, show the secondary aspect; the formulation of them depends upon the supply of available con-

ceptions more or less modified to meet the demands of the situation, and this trimming and sharpening of traditional concepts is the winning of new ones. A primary problem involves, we might say, such a reaction of the situation upon the ideas brought to bear upon it as to alter some of them. It is not necessary, however, to say, as I have said thus far, that this modification, this step ahead, results from the pressure of a situation. Call it the genius of the thinker, call it anything that describes an unsatisfactory inadequacy of idea to fact. It is, however, a changing situation which renders ideas once adequate no longer so. But however that may be, so long as the pressure of the situation is felt as one of the factors which determine a problem and bring it to existence, the interest is in the here and now, in straightening out *this* situation. The time comes, however, when philosophy seems naïvely unaware of the world about it, and is chiefly engaged in elaborating a metaphysical tradition, in bringing out the full implications of ideas, or maybe in dodging those implications. The problems are strictly logical and technical, but the tension which brought forth their primary originals no longer exists. To take another extreme illustration: Dante's essay in political theory, the "*De Monarchia*," was genuine philosophy, an earnest discussion of primary problems that concerned, in the most penetrating way, the civilization of his country. After the German Emperor had agreed not to interfere in Italian affairs one might still speculate whether the Pope was subordinate to the Emperor or the Emperor to the Pope, or whether both received authority directly from God, and why these things were so, but it would be reflecting about problems that had ceased to exist in any primary fashion. Yet as a problem embedded in conceptions only it may persist, and it will be a problem of the eternal type. It is a rather fascinating one for the student of the period, but it is relevant only to the writing of history. An impressive case of primary metaphysics is the philosophy of Spinoza, primary certainly for its author. But suppose Spinoza had formed a school. The spirit shudders at the thought of its refutations and proofs. The persistent study of Thomas Aquinas in Roman Catholic seminaries is the best illustration of an actual cult of secondary problems. Not that the philosophy of St. Thomas is undeserving of the attention of any liberal person; only it is deserving of it in precisely the same sense as are the political theories of Dante.

The types of problems that I have called primary and secondary exist, although a given problem may have so much of the nature of each as to make it difficult to draw the line. Yet it is surely in the interest of philosophy to recognize the distinction, and if it is the

aim of one to hold the mirror up to the world of Parmenides, the task of the other is to find something like an effective adjustment in the world of Heraclitus.

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REVIEWS AND ABSTRACTS OF LITERATURE

Yale Psychological Studies. New Series, Vol. I. No. 2. *Monograph Supplement, Psychological Review*, Vol. VIII., No. 3, June, 1907. Baltimore: The Review Publishing Co. Pp. 227-423.

This number of the *Yale Psychological Studies* contains five reports of investigations concerned in different ways with the general subject of the connection between motor adjustments and consciousness. The first studies the vocal production of tones; the second, movements made in writing; the third, hefting equal weights of unequal size; the fourth, reproduction of simple percepts by means of drawing; the fifth, eye movements in convergence and divergence.

The paper on "Tonal Reactions" is by Edward Herbert Cameron. Dr. Cameron experimented with seven men of various degrees of musical training and ability. His experiments were of three kinds. In the first he had each man sing three tones—one of high, one of medium, and one of low pitch, all of the subject's own selection—and sustain the note selected in each case as uniformly as possible for a moderate length of time. In another series of experiments each subject was required to imitate a standard note sounded on an organ pipe. In still another series, while the subject was imitating the standard organ note, another tone was sounded from another part of the scale for the purpose of distracting his attention. The vibrations of the reactor's voice were recorded, by means of a mica diaphragm with connecting levers, on smoked paper. The records were read by means of a special device.

The results of the first series of experiments showed that the pitch of the tones, which the men tried to sustain uniformly, varied from moment to moment. The beginnings were irregular; there was a rise in the first tenth of a second, followed by fluctuations and a tendency to raise the pitch towards the end of the tone. When short intervals of rest were interposed the results were not different.

In imitating standard tones there was a general tendency to sing higher than the standard. The imitation was a little more exact when the standard kept on sounding than when it ceased before the subject began. Different individuals, as might be expected, showed different degrees of ability. There were more errors with low than with high notes.

The experiments on distraction were made by sounding a note, sometimes higher, sometimes lower, than the standard; sometimes harmonious and sometimes inharmonious with the standard, and at varying intervals from it. The distracting tone began as soon as or before the sung tone.

When distraction occurred, which could be determined by comparison with the results of the first series of experiments, it was sometimes in the direction of the distracting tone, sometimes in the opposite direction. In 20 cases out of 29 where distraction was plainly apparent, the distracting tone and the standard were discordant. In 25 cases the distracting tone and sung tone were harmonious. The author concludes that a discordant tone is more distracting than a harmonious tone; and that the tone sung under the influence of a distracting tone is usually harmonious with the latter.

The paper ends with a discussion of the neural conditions which the author supposes to explain these results. The results are in agreement with the view that the nervous impulse is not continuous, but intermittent. "The process of reaction and control may be described as one of constant nervous readjustment." The author, further, accepts MacDougall's theory that the degree of consciousness depends upon the resistance offered by the synapses, or junctions of neurones, in the motor channel. He conceives that adjustments of motor discharge to sensory excitement in the "motor circle" go on without the reactor's voluntary participation. The addition of sensory excitement may result in modification of the special motor discharge, the pitch sung; or the equilibrium in the motor circle may maintain itself and the additional excitement pass off through other channels.

The paper on "Preliminary Experiments on Writing Reactions," by Frank Nugent Freeman, describes an apparatus for obtaining records that show all the details of rate and pressure in the kinds of movement usually made in writing or drawing. The experiments were made with short, straight lines, squares and circles. The reactor was required to begin, to stop, or to turn at a signal.

It was found, in general, that the start was made more quickly than the stop. When the movement to be executed was complicated the time of starting was slower than when a simple movement was intended. In these experiments, as in those of the first paper, the subject's introspective observations were also taken. The significance of the results, as summed up by the writer, is in agreement with the conclusions of the writer of the preceding paper. "The results of this investigation emphasize the unity of a reaction process and emphasize further the complete parallelism between the conscious attitude as a whole to the reaction complex as a whole, while showing clearly that consciousness does not reflect in detail the factors of the reaction."

The third paper, on "Reactions to Equal Weights of Unequal Size," by Herbert N. Loomis, describes a method of recording the movements which are executed in lifting two boxes of equal weight, but unequal size. The small box was mounted on a shelf which brought it up to a level with the top of the large box. Linen threads attached to the bottom of each box were passed over pulleys beneath and connected with levers whose movements were traced on smoked paper. Thirty-six reactors were experimented with, and four hundred records made. The reactors were told to raise the weights, one with each hand, in as nearly the same manner as

possible; to raise them in any way preferred; to estimate their relative weight and then to replace them.

In the great majority of cases the large box rose before the small one, in the earlier tests. As the subjects became acquainted with the illusion, this precedence of the large box fell off. The energy expended in hefting the large box, shown by the areas of the curves, was also greater than that used in hefting the small one, and this continued throughout the series of experiments. The results show that a subject has much greater muscular tension in the hand which lifts the large box than in the hand which lifts the small box. The writer concludes that this is "the direct expression of an organized habit of response to familiar visual object." This organized habit is not entirely overcome in the later tests even by the experience of the earlier tests. The irregularities in the second and subsequent tests are thought to be related to the conflict between the natural tendency to react differently to the two boxes and the recently acquired experience. "The muscular tension is not due to any voluntary effort, but is the motor phase of a total sensory-motor adjustment which is the perceptual process."

The paper on "Studies in Perceptual Development" is signed by the editor, Professor Charles H. Judd, and Professor Donald J. Cowling. The results of the experiments reported in this paper do not lend themselves to tabulation. The writers mention as one motive for their investigation the desire to provide a convenient laboratory exercise illustrating mental development. A simple figure composed of straight and curved lines was exposed for ten seconds and the subject requested to draw it. This was repeated with the same figure ten or more times. In one group of tests the subject drew with his eyes closed; in another, he saw the movements of his hand, but not the drawing; in a third, he saw what he was drawing. Several sets of drawings are reproduced and discussed in detail.

It is not assumed that the growing perfection of successive drawings was due to training in execution, but to the growing distinctness of the percept. Different subjects learn the figure in different ways—some beginning at one end, some at the other, and some in the middle. In general the work was most accurate when the subject could see his drawing, but there were exceptions to this rule. Improvement in correcting the size of the figure did not go along with improvement in shape. This seems to the writers "to justify the distinction between the sensory and perceptual processes which are involved in recognizing position and size."

The last paper, by the editor, reports a series of photographs on the movements of the eyes in convergence and divergence. The apparatus was the kinetoscope camera used as reported in an earlier number of the *Yale Studies*, with the addition of a mechanical device for driving the camera so as to obtain uniform motion. As described in the earlier paper, a speck of Chinese white placed on the cornea served as the luminous point to be photographed. Five subjects were employed in the investigation, one being blind in his right eye. The convergence and divergence of the eyes took place in fixating alternately one or another of two points placed at unequal distances. The points were sometimes in the median

plane between the eyes, sometimes in lateral positions, and especially in the axis of vision of one eye.

The photographs, of which a number are sketched, show that there is a lack of harmony in the movements of an individual's two eyes. One eye may move while the other stands still; or one may make a long movement while the other makes a short one. The character of this lack of harmony is different in different individuals. The writer thinks it is due to external muscular causes, differences of muscular balance or tension, and not to internal nervous adjustments.

The movements of convergence and divergence take a long time compared with simple lateral movements. The adjustments are complex, consisting of a main adjustment in which the fixation is approximated and fine adjustments resulting in satisfactory fixation.

The photographs show that there is a tendency of a fundamental character for both eyes to move laterally in the same direction. The converging and diverging movements have to overcome this tendency. The fundamental character of this tendency is shown when the fixation points are in the axis of vision of one of the eyes, making it unnecessary for that eye to move at all. It, nevertheless, executes a complicated series of movements in sympathy with the other eye. The unseeing eye of the blind subject moved in sympathy with the seeing eye.

Monocular adjustment, when one eye is covered, is shown to be of a simpler character. The covering of one eye, however, does not give perfect monocular adjustment. The covered eye is known to move, and exerts an influence on the movements of the seeing eye.

An interesting set of drawings is given that shows the movements of the eyes in a subject who attempts to make two points fuse stereoscopically without the help of an instrument. The photograph of the eye movements of a subject who finds difficulty in effecting the fusion shows the tendency towards sympathetic lateral movement constantly balking his efforts.

In his theoretical discussion the writer argues against a direct relationship between sensations of eye movement and the visual perception which the movements bring about. The sensations of movement are not analyzed out of the total situation. Many of the movements, moreover, are in direct opposition to the character of the adjustment which the subject is aiming to attain.

The writer reaffirms the theory, expressed in a former paper, that movement is a central mode of organization, and that retinal sensation controls the binocular adjustment that ends in fusion of images.

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Folkways. W. G. SUMNER. Boston: Ginn & Co. 1907. Pp. iv + 692.

Professor Sumner has rendered a service to sociology in calling attention to the importance of the study of what he terms *mores*. A distinct gap is filled by this dissertation, the text for which has been furnished *en passant* by Professor E. von Hartmann in his work on moral philos-

ophy. Books on the development of culture there are, such as J. Lippert's "Kulturgeschichte der Menschheit," of which the author makes use, but none of these traces the compelling influence of the *mores* through the maze of varying custom. Folkways, the title of the work, are for Professor Sumner the ways of satisfying needs and interests which are uniform, repeated, and concurrent. With Hartmann, he defines *mores* as folkways when they have taken on the philosophy of right living and a life policy for welfare. Folkways are made unconsciously. They are not due to philosophy or ethics. These latter are never original or creative, but secondary and derived, though they may be regulative. Religion and philosophy are components of the *mores*, and the former derives its strength from them.

A study of their growth shows that the *mores* are the products of each to live as well as he can, and at the same time coercions holding and controlling him in this endeavor. They are not a mere study of the past, but alive and growing to-day: witness the so-called international *laws*. There is no development along any lines of logical or other sequence. The *mores* shift in endless readjustment of the modes of behavior, effort, and thinking, so as to reach the greatest advantage under the conditions. The movement is in response to a change in material environment, sometimes to poverty, at other times to prosperity, but not to ethical ideas.

The author dwells again and again on the dominance of the *mores*, and in setting forth the importance of their study claims that the reaction of free judgment and taste will keep the *mores* fresh and active, and the schools are undoubtedly the place where they should be renewed through an intelligent study of their operation in the past.

In conclusion he warns us against the present-day experiment of the success cult in molding the *mores*. Moral traditions, he adds, are guides which no one can afford to neglect.

The plan of the work comprizes an analysis of the author's concepts and their workings, followed by illustrations culled from the usages and practises of peoples the most diverse, geographically and historically. This latter feature makes the book especially useful to the student of anthropology. Here he will find a compilation of customs and rites duly correlated, with full references and a satisfactory index.

Under a mass of detail the leading idea is maintained throughout the book, nevertheless from the student's point of view it is not an easy textbook to read or digest. From the standpoint of those of larger growth it appears congested and scrappy, and suffers the penalty of brevity in drifting occasionally into over-statement and uncritical acceptance of evidence. In this latter connection we may mention a panegyric on the Japanese from the pen of the enthusiast Lafcadio Hearn, whose later years witnessed a disillusionment.

Throughout the book the author hits hard and does not stay to bandy words with his adversary; but, although the reader may not always agree with him, he will find Professor Sumner suggestive and stimulating.

C. H. HAWES.

Spinoza and Religion. E. E. POWELL. Chicago: The Open Court Publishing Co. 1906. Pp. 340.

This book, the author says, is "a polemic against a mistaken interpretation of Spinoza's philosophy and personality." The real Spinoza was in no sense religious. Nor does his system furnish the slightest basis for religion. "The right name for Spinoza's philosophy is atheistic monism. It represents a world-view which, in its essential features, is the very antithesis of that required by the religious consciousness."

The author supports his position in the introduction, which includes an extended biographical sketch, by laying much emphasis on Spinoza's timidity, and his consequent willingness to use religious language where he could. This language is partly an equivalent for non-religious philosophical conceptions, and partly the result of an effort to conceal the real bearings of his atheistic philosophy.

The argument then proceeds to an analysis of Spinoza's conception of God. Spinoza's absolute is really no God at all. It has no moral attributes. It is not an all-inclusive consciousness. Strictly speaking, it does not think. To all intents and purposes it is materialistic in its nature. With Spinoza "matter always takes logical precedence to thought wherever ontological and cosmological questions come into the foreground." Now religion requires, of course, a spiritual conception of the absolute. Still more: "Religion is the emotions and activities determined by belief in a higher *personal* power, or in higher personal powers, with whom man is assumed to sustain relations."

The last part of the book is given to the examination of particular conceptions that are supposed to give evidence of religious interest on the part of Spinoza. The most important of these, namely, the "intellectual love of God," the author finds to mean "nothing but delight in the intelligible as intelligible."

The book is clear in style, thorough in execution, and exhibits much logical acumen. In its argument frequent use is made of the "Short Treatise." The discussion turns on the definition of religion. It may be that the conception of the personality of the Deity ought always to be present in religion, but how can it be affirmed that it is always present? It is the author's definition of religion that, in the first instance, rules Spinoza out of the religious realm. Then, while many contradictions are pointed out in Spinoza's thought, the author fails to perceive a deeper lying contradiction, which is more to the philosopher's credit. It is true that what at first seems the primary tendency in Spinoza, the effort for the unification of all reality in thought, results in robbing man, and his personal and ethical interests, of all significance in the universe. But, on the other hand, in seeking for a practical attitude in life Spinoza attained, both in theory and in conduct, a peace and mastery that were essentially religious. The "intellectual love of God" signifies more than Spinoza's instinctive enjoyment of the intelligible as such. It stands for moral achievement on a religious basis; it stands for freedom through

surrender, for that strength through resignation from which the name of religion should not be withheld.

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JOURNALS AND NEW BOOKS

ARCHIV FÜR GESCHICHTE DER PHILOSOPHIE. October, 1907, Band 21, Heft 1. *Leibnitzens Lehre von der Körperwelt als Kernpunkt des Systems* (pp. 1-17): M. LEOPOLD. - This is the first of three articles; it gives succinctly Leibnitz's conception of the corporeal world and its laws, and shows how his concept of the monad resulted from his recognition of the potentiality inseparable from the continuity of *materia prima*. *Gedankengang und Anordnung der Aristotelischen Metaphysik II.* (pp. 18-29): A. GOEDECKEMEYER. - The "Metaphysics" contains two distinct works, as well as the interpolated chapters 8 to 12 of the second book, and all the fifth book. One line of argument lacks the beginning, the other the conclusion; but each is thoroughly consecutive. *Der Phäidon über Wesen und Bestimmung des Menschen* (pp. 30-49): E. PRÜM. - An analysis of the argument of the Phædo leading apparently to the conclusion held by Zeller, that it is a demonstration of the immortality of the individual soul, in at least partial opposition to the interpretations of Hegel and Windelband. *Platonische Untersuchungen. II. Menon* (pp. 50-75): G. WERNICK. - The apparent flaws in the "Meno" are removed if we look on that dialogue as a defense against the criticism by Antisthenes of the account given in the "Symposium" of the nature of virtue. *Das Dictum de Omni* (pp. 76-92): G. WERNICK. - To find a formula that will apply not only to categorical affirmative, but also to negative and hypothetical judgments, the writer distinguishes between distributive (*fixierend*) and limiting (*begrenzend*) applications of concepts, with results apparently definite and valuable. *Nietzsches Moral vom naturwissenschaftlichen Standpunkte aus* (pp. 93-107): S. STERLING. - Nietzsche overlooks the social character of man, and confuses physical and mental power. *Plato: Philebus, 15 A, B.* (pp. 108-109): R. G. BURY. - A textual discussion. *La philosophie au Moyen-Age* (pp. 110-111): A. LECLEÈRE. - A note on the reviving interest in the history of scholasticism. *Bericht über die deutsche Literatur der letzten Jahre zur vorkantischen deutschen Philosophie des 18. Jahrhunderts* (pp. 115-138): T. ELSENHANS. - Reviews of three books on Tetens and eleven on Leibnitz, as follows: M. Brenke, *Johann Nicholas Tetens Erkenntnistheorie vom Standpunkt des Kritizismus*. Gustav Störing, *Die Erkenntnistheorie von Tetens*. Max Schinz, *Die Moralphilosophie von Tetens*. F. G. F. Wernick, *Leibniz Lehre von der Freiheit des menschlichen Willens*. Anton Seitz, *Die Willensfreiheit in der Philosophie des Aug. Crusius usw.* F. H. Beneke, *Leibniz als Ethiker*. M. Blondel, *De vinculo substantiali et de substantia composita apud Leibnitium*. M. Schornstein, E. Dillmanns "Neue Dar-

stellung der Leibnizischen Monadenlehre." J. Capesius, *Der Apperzeptionsbegriff bei Leibniz und dessen Nachfolgern*. H. Brömse, *Das Metaphysische Kausalproblem bei Leibniz*. O. Willareth, *Die Lehre vom Übel bei Leibniz*, usw. B. Urbach, *Leibnizens Rechtfertigung des Übels in der besten Welt*. J. Kvačala, *Neue Beiträge zum Briefwechsel zwischen D. E. Jablonsky und G. W. Leibniz*. J. Kvačala, *Die Spanheim-Konferenz in Berlin*. Aufruf. *Die neuesten Erscheinungen auf dem Gebiete der Geschichte der Philosophie*. *Historische Abhandlungen in den Zeitschriften*. *Eingegangene Bücher*.

ZEITSCHRIFT FÜR PSYCHOLOGIE. August, 1907. Band 46, Heft I. *Die Referenzflächentheorie der scheinbaren Grösse der Gestirne* (pp. 1-23): ROBERT V. STERNECK. — Descriptive and explanatory sketch of the theory of planes of reference for sun, moon, stars and clouds, with experimental determinations of the various hyperboloids, and reply to recent criticism by Alois Müller. *Über das Wesen der Juckempfindung* (pp. 23-35): LUDWIG TÖRÖK. — Sensations of itching arise from faint stimulation of nerve endings in the skin. These nerve endings, the stronger stimulation of which gives rise to pain sensations, are not identical with those involved in either touch or temperature sensations, and are probably interepithelial. *Besprechungen*: C. Stumpf, *Erscheinungen und psychische Funktionen*, *Zur Einteilung der Wissenschaften*: OFFNER. Theodor Lipps, *Ästhetik*. *Psychologie des Schönen und der Kunst*. *Zweiter Teil: Die ästhetische Betrachtung und die bildende Kunst*: JONAS COHN. *Literaturbericht*: O. EWALD, *Philosophische Grundlegung, der modernen Psychologie*: SANGE. F. E. O. Schultze, *Einige Hauptgesichtspunkte der Beschreibung in der Elementarpsychologie*: HERBERTZ. Gutberlet, *Psychophysik*. *Historisch-kritische Studien über experimentelle Psychologie*: DÜRR. M. Reichardt, *Über die Untersuchung des gesunden und kranken Gehirnes mittels der Wage*: SELBSTBERICHT. Anna Wyczolkowska, *Illusions of Reversible Perspective*: MAX MEYER. Johannes Volkelt, *Persönliches und Sachliches aus meinen ästhetischen Arbeitserfahrungen*: AMESEDER. L. Tréves, *Le travail, la fatigue et l'effort*: W. STERN. Boris Sidis, *Are there Hypnotic Hallucinations?* MAX MEYER. *Kindespsychologie*. *Pädagogik*.

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NOTES AND NEWS

THE New York *Evening Post* for October 31 contains the following: "The London Library has lately come into possession of six hundred volumes which were once owned by Leslie Stephen. They were presented to it by members of his family. All of them have to do with religion or philosophy, and every volume has marginal notes in Stephen's hand, or drawings from his pencil. Few of the works are now popular, if they ever were, but the historic value of them all must be heightened by Stephen's annotations. At least, the authorities of the London Library think so, for they have had the pages containing the pencilled notes 'sized,' so as to preserve them as long as the book itself can be kept from falling into dust. The personal interest given to a book through former ownership, or use, by a famous man, we need not dwell upon. It has long been recognized by collectors and booksellers. 'Association books' have their price due to names. But the volumes from Leslie Stephen's library possess a significance far beyond that. They admit us to his literary workshop. They reveal the workings of his mind. In his scattered memoranda and criticisms on the Deists, for example, we are let into the very making of his 'English Thought in the Eighteenth Century.' To one volume, Hobbes's 'Historia Ecclesiastica,' a singular interest attaches, since on the fly-leaf three generations of scholars have written their opinion of the book. Two of them are Robert Southey and Leslie Stephen. The third and earliest is thought to be Robert Nares. Here are the three judgments: (1) *Opus stylo barbarum, argumento confusum, et obscurum ut neque intelligi possit, nec dignum sit in quo labores ut intelligas. Nec perlegi, nec perlegam.*—R. N. (2) *Ego tamen perlegi, non sine fructu, nec sine delectatione quâdam. Nihil me pœnitet hujus perlectionis. Opusculum est tam ingenii acumine quam scabredine carminis vere Hobbesium.*—R. S. [*i. e.*, Robert Southey]. (3) *Ego quoque perlegi et Roberti Southey sententiam valde probo Hobbesii nihil a me alienum puto.*—L. S. Some of Stephen's notes on modern books are characteristically audacious and amusing. They remind one of his letters. In his copy of Mr. Balfour's 'Foundations of Belief' are many spicy comments. One reads: 'This is A. J. B.'s meanest evasion.' Opposite Mr. Balfour's sentence: 'I do not suggest now that the doctrine of the Incarnation supplies any philosophic solution of this difficulty,' Stephen had written 'Modest!' The same lightly characterizing pencil had left its trail through the 'Tracts for the Times.' One annotation is: 'If J. H. Newman really wrote this, it is a curious instance of the kind of stuff that will pass for logic with an able theologian.' On another margin occurs this: 'Reverence—grovelling in the mud before a dumb idol.'

THE following from the *Athenæum's* review of Mackenzie's "Lectures on Humanism: With Special Reference to its Bearings on Sociology" deserves appreciation: "Humanism is not brought into significant relation with sociology, presumably because it took Professor Mackenzie so long to discover how his notion of humanism was to be invested with substantiality that little or no time was left in which to persuade his idea

of a sociology to materialize. For this is yet another humanism—neither renaissance culture nor pragmatism, but something quite new. Dr. Schiller was the first to introduce the word into modern philosophy. On his lips it stands for the Protagorean view that ‘man is the measure.’ Now, however, as it would seem, it has struck the neo-Hegelian opposition that it would be a sad pity if the heretics had the use of so genial an expression all to themselves. Besides, are they not capable of anything—even of branding believers in ‘pure thought’ as anti-humanist, which is as if to say *Volksfeind* at once? So, there being no ‘Trade-Descriptions Act’ that applies to philosophers, Professor Mackenzie was within his rights in adopting the label of the other firm. Humanism means for him ‘a point of view from which human life is regarded as an independent center of interest, if not even as containing within itself the key to all other interests.’ Under this definition—or rather the first half of it, the other half being apparently there to take or leave as you please—any philosopher who happened to give his mind to his breakfast would have to rank as a humanist. Accordingly, all sorts and conditions of men advance at Professor Mackenzie’s bidding to make their bow from the humanistic platform—in one passage Plato, Aristotle, Burke, Comte, Hegel, Carlyle, Ruskin, appear hand-in-hand. Needless to say, however, ‘Hegel especially [amongst the later German idealists, at all events] represents an almost complete humanism. His final interpretation of the world is in the light of the development of “spirit”; and by “spirit” he means the evolution of the human consciousness.’ To any one who reflects on the real significance of the Hegelian ‘spirit’ and ‘evolution,’ this is, surely, a mere play upon words.”

HOUGHTON, MIFFLIN & COMPANY announce for early publication in 1908 a source book in modern philosophy, to be known as “Modern Classical Philosophers,” and to be edited by Dr. Benjamin Rand, of Harvard University. In this book Dr. Rand has sought, so far as practicable by means of selections, to present the history of modern philosophy, in the words of the great thinkers. Selections for this purpose have been made from the works of Bruno, Bacon, Hobbes, Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, Kant, Fichte, Schelling, Hegel and Spencer. The aim has been to bring together such chapters from the writings of these great ones as will best set forth the most essential features of their systems.

HERBERT SPENCER provided in his will that his friend Dr. Duncan should compile and publish Mr. Spencer’s “Life and Letters.” The material of the autobiography, which comes down only to 1882, is not duplicated. The work is to be published in the near future.

PROFESSOR OTTO PFLEIDERER has added a volume entitled “Die Entwicklung des Christentums” to his other studies of the early age of Christianity.

THE Macmillan Company have resumed the publication of their translation of Nietzsche. “Beyond Good and Evil” has just appeared.

THE first number of the *Harvard Theological Review* will be published by the Macmillan Company in January.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

PSYCHOLOGY: WHAT IS IT ABOUT?

THIS brief series of papers is written in the firm belief that the study of psychology is made more difficult and that the advance of psychology is checked, first, through the common failure to recognize explicitly the real subject-matter of the science and, secondly, through the underestimate of adequate description in psychology. Both tendencies reveal themselves in what I take to be a mischievous disregard for consistent, though provisional, definition and for adequate classification. There is need of courage to make this avowal in the face of present-day disparagement of definition and classification; but it seems to me very evident that for purposes as well of useful introspection as of fruitful experiment, the psychologist—student or teacher—needs to know what he is observing and describing. Until there shall be more explicit agreement on this fundamental question, one may be pardoned for recurring to it again and again.

Any serious attempt to define and to classify forms of consciousness will act as a "red rag" waved in the face of many critics. The effort to define accurately and to classify in any detail is bound, they will urge, to result in a conservative clinging to conclusions once reached and in a love of schedules and schemes for their own sake. The system maker, they will insist, is likely to subordinate the facts to his classification and to cut down the truth to the measure of his framework. In the opening paper of this series I wish to discuss this criticism of definition and classification and to consider their position in psychology. The relation between the two may be simply stated: classification presupposes definition, and no satisfactory classification is possible unless the definitions on which it is based are self-consistent and strictly adhered to. Besides being founded on adequate definition, an ideal classification must, furthermore, be made on a wise principle—in other words, it must employ an obvious, a simple, and a fruitful principle of division, and it must be complete enough to cover the facts under discussion.

Up to a certain point, all scientists classify and define the phenomena which they investigate. Every student must have a

notion of the objects of his study; and yet the facts taken one by one would defy the span of attention. Thus, the only chance alike for adequate description and for satisfactory explanation is, first, provisional definition and, then, such a grouping of the facts that a single pulse of attention and a single explanation will cover a whole mass of phenomena. But in spite of these obvious considerations psychologists in general underestimate the importance of careful and consistent definition. Most of the difficulties of our psychological text-books are due, in my opinion, to a certain looseness of conception, or at any rate of definition. The thoughtful student is actually checked in his psychological advance through his futile attempts to discover what his author means by a given term, or through his difficulty in reconciling really divergent accounts of an experience to which a single name is given.

The failure to classify consistently and completely is less significant. Yet one really does not know a phenomenon till one has fully grasped its essential likenesses to other facts; and the complete knowledge of likenesses and differences implies an adequate classification. It can hardly be maintained that writers of our text-books of psychology are always alive to the fact that the student is actually helped by careful classification and embarrassed both by the omissions and by the inconsistencies of faulty systems. In most psychology books one finds, it must be admitted, enumerations in place of systematic groupings, classifications on conflicting principles, errors and inconsistencies of all kinds—for example, the intrusion of “images” into the class of psychic elements, and the lack of any mention of “association” under the head of “psychic connection.”

Yet the modern attitude of disparagement toward definition and classification has its roots in a justified apprehension of the dangers with which each procedure is beset. On the one hand, definition and classification may be premature and overrigid; and, more specifically, both may be merely verbal. The force of this second criticism must at once be admitted. Psychology, in the hands of a teacher who lays stress on verbal definitions and on traditional groupings, may become a mere text-book subject, a memorizing of verbal statements and of uncomprehended schedules. And a science degraded into a study of words and formulæ is worse than useless, it is degenerate. But definition and classification rightly conceived are not verbal; and a definition, though expressed in a form of words, is not a form of words, but a meaning, the statement of verified and then generalized experience. No teacher worth the name will allow a student to recite a definition without concretely illustrating it, or to study an attempted classification without first framing one on the basis of his own experience.

The justice of the more general criticism has also frankly to be acknowledged. The systematic psychologist is in truth beset by the temptation to base definition on insufficient observation, and he sometimes refuses to abandon or widen definitions once gained and classifications once tabulated in favor of the results of fresh observation. In both cases scientific progress is checked at its source. But it is foolish to foreswear classification on the ground that it may be overworked, to refuse, as it were, to make use of a set of pigeonholes, lest one put things into the wrong places or become so enamored of a given arrangement that one is incapable of changing it. To alter the figure: definitions and the resulting classifications are not roosts, but perches for further flight. The advocates of careful definition and of logical and complete classification must be first to recognize that there is nothing sacred or unalterable in either. Definition and descriptive classification are, indeed, second in science, not first: they follow on analytic observation and must be altered with every supplement or correction of the results of observation. Again, definition and descriptive classification are second in science, not last: the scientist may not rest in awed contemplation of either, but must follow them by honest attempts at explanation. In a word, the rôle of classification and of definition is neither the initial part nor the final one, yet each has an important and a somewhat neglected part to play. One may, indeed, compare the value of definition and grouping for the student of science to the use of the grammatical paradigm for the student of language. By the older method the student learned rules and paradigms as a preparation for reading; by the so-called natural method he attempts to read with blithe disregard of rule and form. Ideally, however, the study of grammar is the second stage in learning a language, just as the framing of definition and table is a middle stage in all scientific study.

I have so far spoken of the value of definition and classification to the student of what is called purely introspective psychology. It seems to me that both are essential, also, to the widening of the science; and since a concern for experimental and comparative psychology is often regarded as a reason for the neglect of definition and classification, I shall briefly state the important reasons for the opposite view. In my opinion, no student can be fitted for the experimental investigation of the nature and conditions of an experience who is incapable of the definition and the classification essential to the identification of experiences and to the interpretation alike of consciousness and of behavior. It is not difficult to justify this statement: To bring about artificially a given result one must be able to describe, in advance, its essential characters—in a word, to classify it. It is therefore essential that one start with a preliminary, but

differentiated, knowledge of the object of study. Pasteur (to select an example outside the domain of psychology) could not have experimented on the effect of the air at different altitudes upon a substance in which bacteria thrive, had he not known what bacteria are and how to identify them.¹ Similarly, Lehmann could not have experimented on the possibility of recognition without the occurrence of associated images, had he not been able to interpret his subjects' record of the experience by his own knowledge of the nature of recognition. On the other hand, every student of the literature of experimental psychology has wasted hours of his time because the experimenters whose results he is studying have held hazy, shifting, and inconsistent conceptions of the very experiences which they purport to investigate.

In comparative psychology, again, we infer the nature of the consciousness of animals from observation of their behavior and from examination of their structure—in particular, of their sense organs. At best the task is intricate and difficult, for we are all too prone to attribute to animals the experience which we think we should have if we acted as they act. The peculiar value of experimental comparative psychology is that it serves to check this tendency and to provide a basis of fact for our inferences. But boxes and labyrinths would avail little except in the hands of men who clearly know the nature of the consciousness which they attribute or deny to animals. On the other hand, the peculiar value of recent studies in animal imitation is precisely the careful analysis of imitation which the experimenters make, their distinction of objective imitation—that is, fortuitous repetition—from conscious, subjective, voluntary imitation, and their rigid exclusion of cases in which their animals give indication of imitation only in the former unpsychological sense.

This defense of definition and classification is, I trust, no unfitting introduction to a series of papers in which the effort will be made to define the basal fact of psychology and to outline the essential divisions of consciousness.

I. PSYCHOLOGY AS SCIENCE OF THE IDEA: WHOSE IDEA?

Psychology has been variously defined as the science of "consciousness" or of "the mental life" or of "experience." Of late years vigorous attempts have been made, from the most various motives, to eject the term consciousness from our vocabulary, but, in my

¹ Cf. Frances H. Rousmaniere, "A Definition of Experimentation," this JOURNAL, Vol. III., p. 676.

opinion, these efforts, though richly significant, are metaphysical, not psychological, in their import, since all are mainly concerned to overcome the dualistic opposition of psychical to physical.² For, whether accurate or inaccurate, the attempt to balance the account of thought and thing—that is, to distinguish psychical from physical—is concerned with the problem of ultimate reality, not with the explanation and description of observed facts, and is therefore metaphysical, not scientific, in character. Tradition, however, and methodological expediency alike counsel us, as psychologists, to admit from our standpoint the every-day opposition of psychical to physical; to insist that, psychologically regarded, consciousness, or experience, is a primary fact; and to give over the essentially metaphysical attempt to reduce psychical to physical, or physical to psychical, or both to a more fundamental category.

But even among psychologists who agree to define psychology, in a preliminary way, as “science of consciousness” or “science of the mental life” or “science of psychical phenomena,” there is disagreement in regard to the further limitation of the conception. There are, in truth, at least three contemporary conceptions of consciousness and accordingly three types of psychological theory. Psychology is conceived (1) as science of the mental state, or idea, (2) as science of the mental function, and (3) as science of the conscious self.³ I am myself profoundly convinced that consciousness is never

² James (“Does ‘consciousness’ exist?” this JOURNAL, Vol. I., pp. 477 ff.), Perry (“Conceptions and Misconceptions of Consciousness,” *Psychological Review*, Vol. XI., pp. 282 ff.) and Bawden (*Philosophical Review*, Vol. XI., pp. 474 ff., Vol. XII., pp. 299 ff., Vol. XIII., pp. 298 ff., 541 ff., this JOURNAL, Vol. I., pp. 62 ff.) seek to gain this end by coordinating psychical and physical under a higher concept—“experience” or “action.” Woodbridge (“The Nature of Consciousness,” this JOURNAL, Vol. II., pp. 119 ff., “The Problem of Consciousness,” in the Garman Commemorative Volume, pp. 137 ff.) and Montague (this JOURNAL, Vol. II., pp. 309 ff.), on the other hand, subordinate consciousness to thing by conceiving consciousness as a relation (coordinate with space and time) between things. It could be shown, I think, that the first theory is as strongly idealistic in its implications as the second theory is realistic. But such comments would be as metaphysical as the theories themselves, and are therefore out of place in a purely psychological paper.

James Ward’s objection to the term “consciousness” (“On the Definition of Psychology,” *British Journal of Psychology*, Vol. I., pp. 21 ff.) is based on a different ground—his conviction that the term is ambiguously used for reflective “self-consciousness.” On the main issue of these papers I understand myself to be in entire accord with Professor Ward.

³ In “Der doppelte Standpunkt in der Psychologie,” p. 33, note, I suggested the equivalence of the second and third of these conceptions of psychology. In a later paper of this series I shall state more exactly my view of the relation of function to self. In the meantime it should be noted that the identification of self-psychology and function-psychology has been disavowed by certain functional psychologists. (Cf. Stumpf, monograph cited below, p. 9, note; F. Arnold, *Psychological Review*, Vol. XII., p. 372.)

adequately conceived except as conscious self; and that both the other conceptions of consciousness imply this. I believe, moreover, that the explicit adoption of this view would illuminate and clarify the treatment of psychology and would facilitate experimental and comparative study. This deep-rooted persuasion of the utility of the conception of psychology as science of the conscious self is my excuse for bringing it forward once more and for considering the objections urged against it.

As science of idea, psychology treats of the "mental state" or "content of consciousness" or "idea"—that is, of consciousness when consciousness is (1) regarded in abstraction from any self or subject or mind, and (2) viewed as temporal, as belonging to some particular moment. The use of the term "idea" in this sense dates from Locke. It is open to the objection that the word is often employed with a narrower meaning, that is, as opposed to "percept," on the one hand, and to "emotion" and "volition," on the other; but I have found no single word to take its place. Professor Titchener, to be sure, replaces the word "idea" by "mental process," but his appropriation of this term must be energetically opposed. The word "process" implies either an operation, activity, or function, or else a succession or progression. In the first sense the term has no place in a psychology which treats itself as analogous to morphology. In the second sense it is applicable not, as in Titchener's usage, to a single "idea," but to the whole series of ideas.⁴ I may add that I scruple to use the expression "structural psychology" in place of my awkward term "idea psychology," since I prefer to reserve the word "structural" to characterize the useful analysis into elements which—despite claims to the contrary—is not the exclusive procedure of "idea psychology."

But psychology is inadequately viewed as science of ideas. This inadequacy may be stated in the following fashion: If I conceive psychology as science of ideas I inevitably raise the scientifically relevant question, Whose idea? and then I arbitrarily refuse to answer my own question. In other words, the "idea" is immediately experienced as idea of a self, or subject, mind, ego—call it as one will. To refuse to deal with this self is indeed theoretically possible, but is a needlessly abstract, an artificial, an incomplete procedure. In a later paper of this series the effort will be made to show that an idea psychology is incapable, through this funda-

⁴ Cf. Titchener, "An Outline of Psychology" (New Edition, 1905, § 2, p. 9). For other statements of the second criticism, cf. my paper on "A Reconciliation between Structural and Functional Psychology," *Psychological Review*, Vol. XIII., p. 64, note, and J. R. Angell, "The Province of Functional Psychology," *ibid.*, Vol. XIV., p. 66.

mental inadequacy, of describing adequately some, at least, of the facts which it studies.

It has been objected that my contention, ideas are experienced as belonging to a self, is based on my own self-observation merely, and that I have not a right to foist the results of my introspection on any psychologist who declares that he finds himself conscious of ideas and not, at the same time, conscious of the self who has the ideas. In reply, I must emphatically state that I have never found any upholder of idea psychology who does not unambiguously imply the consciousness of self as part of the experience described in terms of the idea. Thus, Professor Titchener actually defines "mental process" (his synonym, already criticized, for "idea") in terms of self: The mental process, he says, is "any process falling within the range of *our experience* in the origination and continuance of which *we are ourselves* necessarily concerned."⁵ And Professor Münsterberg defines the psychical as "that which may be experienced by one subject only," in contrast with the physical which he describes as "that which can be thought to be experienced by several subjects together."⁶ Titchener, moreover, distinguishes his two elemental forms of mental process, sensation and affection, on the ground that, "regarded from the point of view of ordinary life, blue and warm are somehow detachable from oneself, whereas pleasantness is always within oneself."⁷ Now, it is hard to see how the idea psychologist can reasonably deny that the self, or I, is after all the basal fact of psychology, if he himself has recourse to the consciousness of self in distinguishing ideas from each other and—more than all—if he defines the idea ("mental process," "psychic content") in terms of self. In the words of Professor Ward: "The psychologist can not bring out the characteristics of his own standpoint by saying, There are such and such presentations or feelings. . . . To this end his statements must (and always do) take the form, *He, this experient, has* such and such presentations, feels thus and thus. . . . And . . . to eliminate [this] is to ignore the experience of the individual subject altogether and to abolish what is characteristic of psychology."⁸

To this argument, from the implication by idea psychologists of a self, Professor Titchener⁹ and others have objected that the self,

⁵ "Outline of Psychology," § 2; italics mine.

⁶ "Grundzüge der Psychologie," p. 72. Münsterberg, however, doubtless regards this as a philosophical definition.

⁷ "Outline of Psychology," § 32 (1).

⁸ "On the Definition of Psychology," *The British Journal of Psychology*, Vol. I., p. 23. Cf. the statement of Lipps ("Leitfaden der Psychologie," p. 2), "To every content of consciousness belongs this relatedness to the I."

⁹ *Philosophical Review*, Vol. XV., pp. 93 ff. Cf. W. B. Pillsbury, "The Ego and Empirical Psychology," *Philosophical Review*, Vol. XVI., pp. 387 ff.

thus implied or referred to, is regarded as a philosophical or an epistemological reality, but not as the proper object of a scientific psychology. But Titchener himself suggests the possibility of a scientific study of the self when he says, in the passage last quoted, that "from the point of view of ordinary life . . . pleasantness is . . . within oneself." For, by these words, he rightly implies that the self is an object of every-day consciousness; and since any such object of ordinary consciousness may become the object, also, of scientific study, it follows that there may be a scientific study of oneself. In a word, the plain man's "self," the self about which one raises no metaphysical question of ultimate reality or final destiny or definite place in the total scheme of things, may become the object also of the psychologist's observation.

Later papers of this series will seek to elucidate further this conception of the self. The main object of this section has been to lay stress on the truth that the idea is immediately experienced as idea of a self; that this self may be scientifically studied; that, accordingly, psychology is inadequately conceived as science of ideas.

II. PSYCHOLOGY AS SCIENCE OF MENTAL FUNCTIONS: FUNCTIONS OF WHAT?

THE reaction against the artificiality and abstractness of psychology conceived as science of ideas, or mental contents, has for the most part expressed itself in a doctrine of psychology as science of mental functions. It is not altogether easy to understand and to estimate this teaching because avowed functional psychologists use the term "mental function" in somewhat different senses. (1) Mental functions are perhaps most often described as "operations of consciousness,"¹⁰ "modes of mental action," "forms of mental process"—in the words of Stumpf's recent monograph, as "Akte, Zustände, Erlebnisse."¹¹ The pith of the distinction, as actually made, is usually the contrast drawn between the liveliness and concreteness of mental "function" as contrasted with the dead abstractness of the "idea," "presentation," or "content." This con-

¹⁰ "The Province of Functional Psychology," J. R. Angell, *Psychological Review*, Vol. XIV., pp. 63, 64 *et al.*

¹¹ "Erscheinungen und psychische Funktionen," reprinted, 1907, from the *Abhandlungen d. Kgl. preuss. Akad. d. Wissenschaften vom Jahre 1906*, p. 4 of the reprint. It is worthy of remark that Stumpf does not adopt the biological-teleological view of consciousness which the succeeding pages of this paper outline. Indeed, he explicitly disavows the conception of "function as part played with reference to reaching or maintaining an end." In brief, Stumpf teaches that psychology is concerned both with mental functions and with mental contents. (For a fuller account and a brief criticism of this "eclectic" position, cf. a forthcoming notice by the writer in the *Psychological Bulletin*.)

ception of consciousness as mental activity has been prevalent from the beginning in psychology,¹² but has most often been employed by writers who have alternated it, in misleading eclectic fashion, with the radically different view of consciousness as series of ideas.¹³

The most patent objection to the teaching is its indefiniteness, its lack of positive character. Consciousness, it declares, is activity, not static content. But—as so far outlined—the doctrine fails to distinguish psychic operations from activities of any other type. Accordingly, functional psychologists in increasing numbers have added definiteness to the teaching by (2) conceiving consciousness as reaction, that is, as activity-in-relation-to-environment.¹⁴ This is the prevalent biological conception in psychology according to which one regards “all our sensations, all our emotions and all our acts of will as so many expressions of organic adaptations to our environment.”¹⁵ Consciousness, from this point of view, is essentially a means of coping with one’s surroundings either through accommodation to them or through control of them. This environment may be conceived as physical, biological, or personal; but ordinarily less stress is laid on the personal environment.¹⁶ It should be carefully noted, in passing, that this functionalist doctrine of consciousness as reaction to environment by no means involves *identification* of consciousness with bodily reaction or attitude. It is true that certain functional psychologists make the identification, but nothing, in my opinion, is more prejudicial to functional psychology than this careless habit of defining consciousness in terms of motion—of describing perception, for example, not merely as a reaction to environment, but as “an essentially motor process.”¹⁷

The outline of the doctrine of the mental function is not, however, yet complete. The contemporary functional psychologist, not content with describing consciousness as reaction to environment, commonly (3) lays stress on the “value,” “meaning,” or “utility” of the reaction. From this point of view, functional psychology is

¹² Cf. Angell, “The Province of Functional Psychology,” *loc. cit.*, p. 63.

¹³ Cf. on this point my “An Introduction to Psychology,” pp. 445–446; “Der doppelte Standpunkt in der Psychologie,” p. 9.

¹⁴ Thorndike, “Elements of Psychology,” p. 113: “We could then say that the function of mental life was to be impressed by the environment and to associate suitable acts with all impressions”; and Judd, “Psychology, General Introduction,” pp. 131–132: “The function which a given sensation serves is . . . determined in large measure by the relation into which the sensation enters.”

¹⁵ Angell, “Psychology,” p. 7.

¹⁶ Angell and Judd, however, recognize the social environment of the self. Cf. Angell’s “Psychology,” p. 7; and Judd’s “Psychology, General Introduction,” pp. 310–311.

¹⁷ Felix Arnold, in a review of “Der doppelte Standpunkt in der Psychologie,” *Psychological Bulletin*, Vol. II., p. 372.

the science of "the fundamental utilities of consciousness";¹⁸ "the introduction of the functional standpoint is observation of an is-for";¹⁹ the important task of the psychologist is the discovery of the value of consciousness in delaying, controlling, or selecting. In a word, this teleological doctrine studies consciousness as an activity which furthers organic life.²⁰

It is evident from this outline that whereas most functional psychologists regard consciousness as helpful reaction to environment, all are united in conceiving it as activity, or mental operation. A just estimate of the functional theory must be based, therefore, on a valuation of this conception. But, narrowly scrutinized, the theory of psychology as science of mental activities turns out to be a needlessly abstract, an arbitrarily inadequate view. For activity is clearly a character of something. To call it relational activity and useful activity enlarges, but does not complete, the conception of it, since one inevitably and rightly asks concerning any character not only "of what sort is it?" but "whose is it?" Thus, one asks concerning an activity not only "what kind of activity?" but "activity, or function, of what?" In truth, the conception of mental activity requires the conception of mental actor, even more obviously than the full conception of the idea includes that of its possessor. Psychology as science of the mental function must, therefore, be fundamentally a science of the mental functioner.

As a matter of fact, functional psychologists have tacitly accepted this conclusion. Though they often define psychology as science of mental functions, operations, or activities, yet they refer, more or less explicitly, to that which functions, operates, or acts. Thus, Stout follows the definition of psychology as "positive science of mental process" by the question "What do we mean by 'mind'?"

¹⁸ Angell, "The Province of Functional Psychology," *loc. cit.*, p. 85. Cf. Judd, *op. cit.*, p. 131: "The function of a sensation can be defined only by considering the use to which the sensation is put."

¹⁹ Titchener, "Discussion," *Philosophical Review*, Vol. VIII., p. 291².

²⁰ If there were time, I should like to compare this outline of functional psychology with that of Angell in the address already cited on "The Province of Functional Psychology." In essentials, I think that my summary closely resembles his; and my only important objection to his view is to the following teaching: He asserts (*loc. cit.*, p. 67) that the "functional problem" is "concerned with discovering how and why conscious processes are what they are" and regards this conception of the functional doctrine as "substantially identical" with the conception of function as mental activity. But it seems to me obvious that these are, in no sense, identical conceptions; and that, indeed, the problem of the "how and why" is common to all forms of psychology. (For an assumption similar to Angell's, cf. Thorndike, "Elements of Psychology," p. 184¹).

and the statement "Mind exists, wherever consciousness exists";²¹ Thorndike defines dynamic, or functional, psychology as "the mind in action";²² Angell refers to consciousness as an "agent in the furtherance of the life activities of the organism,"²³ and Judd (as will later appear) explicitly conceives psychology as science of self.

There is, in truth, no way of combating this conclusion, except by arguing that a study of the actor or functioner, however necessarily implied by functional psychology, would be philosophical, not scientific, in character. But at least two distinctly scientific conceptions of the "mental functioner" are held by avowed functional psychologists. The first of these is the conception of the psychophysical organism, the complex of mind and body. Psychology, from this standpoint, is the study of the mental processes or functions of a being at once mental and physical. So far as I know, no one disputes that such a psychophysical organism is a proper object of scientific study. A second scientific conception of the conscious functioner, or actor, is as a self related to a physical organism, yet not constituting with it a single reality.

In the next paper of this series I shall try to elucidate and to compare these conceptions and to defend the scientific character of the second. The aim of this section has been to show that psychology, in so far as it is the science of mental function, is necessarily and more fundamentally the science of the mental functioner.

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REALISM AND THE PHYSICAL WORLD

OPPONENTS of realism have for centuries urged that the subjectivity of that of which we are aware in sense experience is proved by the fact that our *sensa* vary according to the conditions of the physiological organism. These *sensa* can not be qualities of independent objects, it is argued, unless the independent objects are supposed to change with every change in our experience of them, or unless they be considered as the hospitable asylums of all contradictions that are banished from the domain of any single experi-

²¹ "Analytic Psychology," Chap. I., § 1, p. 1. Stout, however, does not, so far as I know, use the expression "functional psychology" in describing his system.

²² "Elements of Psychology," p. 184 and note.

²³ Decennial Publications of the University of Chicago, First Series, III, Part II., p. 64. Cf. the reference of Professor Mead to the "I" or "subject" in "The Definition of the Psychical," *ibid.*, Part II., pp. 104 ff. Cf., also, the reference to "the self" in Dr. F. Arnold's analysis of interest, *Psychological Bulletin*, Vol. II., p. 364³.

ence. But if objects and experience keep step with each other in their alterations, and yet the objects are independent of the experience, it seems as if only a preestablished harmony could account for such an amiable relation; and even then only an obstinate tendency to see double could keep objects and experience apart. If, however, objects remain unaffected by the mutations in our experience and yet this experience always in all its changes remains true to the objects, then the objects must possess all at once the qualities which in our experience appear *seriatim temporatimque*. But this would mean that objects have saddled upon them contradictions that their backs can not bear unless their vertebration defies the principles that Aristotle and F. H. Bradley have laid down for their anatomy. In one form or another this kind of argument has been used against the realist almost from the very beginning of philosophy among the Greeks up to the present day.

One of the most recent ways of putting this difficulty is this: "Until some third alternative is demonstrated, the alternative between the numerical identity and the numerical difference of quality perceived and actual quality must be presumed to be a genuine alternative." But "if there is numerical identity between the quality of the object and the quality perceived, we are obliged to say that the object possesses simultaneously all the qualities revealed in the different perceptions. Or, more specifically, we must be prepared to assert that an object may be both red and gray, both moving and stationary, both square and oblong, both heavy and light; that, in short, our common notions of incompatibility are in the main incorrect."¹

This argument assumes that either *all* "qualities perceived" must be, or else *none* can be, numerically identical with "actual qualities." There is surely a "third possibility" here, and one has merely to point to the so-called square of opposition for its "demonstration." Why may it not be that *some* of the "qualities perceived" are numerically identical with and *some* numerically different from the "actual qualities"?² The realist who adopts this

¹ Professor Bode, in this JOURNAL, Vol. IV., pp. 261 and 263. Professor Bode argues from the commonly accepted point of view that subjective objects are made of conscious stuff; and if such an assumption were correct, his dilemma would indeed be embarrassing to the realist.

² For the present I use the terminology of the critic; I do not consider it satisfactory, however, for it is misleading. Everything of which we are aware is actual in a very fundamental sense. The realist does not deny the actuality or reality of any object perceived; he merely asserts, dogmatically or tentatively, the *independence* of some of these objects; and by this, let me repeat, he means that some of these objects can exist and do exist when there is no awareness of them. Of course it must be admitted here that not all realists maintain

third course may indeed be reasonably called on to furnish a criterion for distinguishing between the two classes of qualities perceived, but he has escaped the necessity of choosing one of the horns of the dilemma offered him for his going. Let us see now whether such criteria can be found.

They can not be found in the *qualia* as they immediately present themselves to awareness. In hallucination and in dream the *sensa* are qualitatively similar to the *sensa* which the realist takes to be "independent." Hence it is a mistake to suppose that we have some sort of indefinable "intuition" which guarantees the independence of certain objects. *Prima facie* all objects stand on the same footing. I think that this statement can be extended as far as Professor James extends it³ and made to include pleasure and pain, hopes, fears, and whatever else in psychology or in popular thought is treated as if "mental" in nature. Let us go farther still, and say—also with Professor James's concurrence, I take it—that "relations" are not mental in their nature. They show no more of the ear-marks of consciousness in their make-up than anything which the most materialistic thinker would set up as the genuine reality. Likeness,

that some of *these* objects exist when they are not objects of consciousness. The most general definition of realism seems to be that it is the doctrine that maintains the possibility of existence of some sort when there is no awareness. I use the term in the rest of this paper of the kind of realism which I am trying to study out to its consequences.

³ "The Place of Affectional Facts in a World of Pure Experience," in this JOURNAL, Vol. II., pp. 286-287: "If 'physical' and 'mental' meant two different kinds of intrinsic nature, immediately, intuitively, and infallibly discernible, and each fixed forever in whatever bit of experience it qualified, one does not see how there could ever have arisen any room for doubt or ambiguity. But if, on the contrary, these words are words of sorting, ambiguity is natural." In this article Professor James has performed a great service in abolishing the wall of partition, in the shape of intuitive certitude, that was supposed to separate unmistakably the "subjective" from the "objective." If he is correct, and I believe that he is, then there is no object of consciousness, in the usual sense of the word object, which is "made, and felt to be made, of consciousness exclusively" (*ibid.*, p. 281). Not only is the stuff of which dreams are made of the same sort as that of which independent things are made, such as the stuff of houses and trees and stars and flowers, but even "our pleasures and pains, our loves and fears and angers" are not made of mind-stuff, nor are they states of consciousness. I differ from Professor James in this matter only in thinking that I can discover in experience something else than all these things, something which is made of conscious stuff, if you will apply to it such a gross term. The term is misleading and I use it here only to accentuate a fundamental difference in our findings of fact. What consciousness is made of is consciousness or, in other words, awareness—which is not a very informing sentence, but is meant in the same sense as when one should say that red is just made of red, denying that you can probe deeper into the essence of it: it is to be taken at its face value.

succession, extension are not "tainted" with consciousness in the way of either external smear or intrinsic ingredient. They are just what we are aware of them as being—that is, they are just likeness, succession, extension. So far would I go with the most thorough-going immediatist.

In a sense, therefore, I think that there is much point to the metaphor which has recently been applied to consciousness: consciousness is perfectly "diaphanous," "transparent." However, when these terms are applied to consciousness in its relation to its objects, we must be careful that we do not consider these objects as anything else than what they purport to be and are in this immediacy of presence to awareness. When we begin to speak of "independent" objects we have got beyond this immediacy of presence, and reach a domain in which, therefore, diaphaneity and transparency may be entirely misleading terms to apply to consciousness. For by an "independent" object the realist⁴ means an object that exists when there is no awareness of it. It may indeed be the same object as that of which we have been aware, or it may have been the same object as that of which we are now aware, or again there may be more to the object now than we are aware of now. In the last contingency, what of more there is to it is, of course, really independent of the awareness, while what there is to it, of which we are aware, is not independent of the awareness, in the sense in which the realist uses the term independent; for that part of the object exists at the same time with the awareness and is the immediate object of the awareness. When, therefore, the realist speaks of being aware of independent objects, he means that he is aware of objects whose existence extends either backward or forward in time beyond the span during which they are immediately present to consciousness. If he ever speaks of the qualities of which he is aware as *now* being independent of the awareness, he begs to be understood as meaning by "independent" something different from what he means by independence when he speaks of the independence of the qualities of which he is not aware. He means that in becoming objects of awareness they have not undergone any qualitative change from what they were when not objects of awareness; or, at least, that if any change has occurred it is not to be set down to their entrance into consciousness. For the realist does not hold to the changelessness of the real, and changes explicable by reference to other conditions may occur in an object just at the time when it becomes known.

Now we are in a position to pursue our search for the criteria for

⁴ Again I call attention to the fact that I mean by this term the advocate of the kind of realism I am studying here. I do not mean to impute the views I am discussing to any person who may properly or improperly call himself a realist.

the discrimination of independent objects from those which are not independent. But we have not far to seek. The word is nigh us, even in our mouths and in our hearts—yea, in the hearts of idealists themselves when they leave their studies and their lecture platforms and get in touch with the problems of practical life.⁵ All that is necessary, therefore, is to describe what we actually do when we all seek to arrive at conviction as to the “independence” of any of the qualities or complexes of qualities of which we are aware. This has been done so frequently and so well that we may be very brief here.

1. When even an idealist attempts to collect insurance on a summer cottage, which he believes to have been destroyed by fire in his absence, he does not necessarily go about hunting human witnesses who actually saw the fire. If they are not forthcoming he does not despair, but neither does he appeal to the perfect witness of all-judging Jove, invoking him by the less poetical and anthropomorphic style of “The Absolute.” Nor, again, does he ask the assessors to award his claim because they have prerational instincts which prompt them to believe in psyches who might under unreal conditions have had sensations of a fire, while he admits that there has been no actual fire. On the contrary he is likely, if he is wise, to take the assessors to the ruins. If they do not see the ruins which he points out to them, he gets off easily if he merely fails to realize on his policy. The first step, then, which any sane man takes to establish the independent reality of anything is to get some *sensa* which are not the monopoly of any single empirical awareness. A single empirical awareness supplemented by the belief that an absolute awareness would corroborate if it could be reached will hardly serve in such an emergency. If the *sensa* are and remain the exclusive possession of the insured, in spite of any efforts he makes to get them presented to the assessors, their objectivity or independence can be maintained only as the substance of things hoped for.⁶ But

⁵ In fact what differentiates the typical idealist of the present day from the realist is not any difference in the use of these criteria, nor any difference as to the independence of objects as regards any empirically verifiable awareness, but merely the fact that having convinced himself, by the use of these criteria, that there are objects independent of any empirically ascertainable awareness, he proceeds to supply to these objects an awareness that is not empirically verifiable and thus he cancels their independence. He would not need such a supposititious absolute or eternal consciousness or experience if he had not already convinced himself that there are objects independent of temporally limited and otherwise finite consciousnesses such as ours are. He bases his belief in the metempirical consciousness on the acknowledged fact of real “independence” of empirical awareness. He can not therefore with grace criticize us for going at least a mile with him on his journey toward his eternal home. His only quarrel must be that we do not go with him twain.

⁶ This failure does not disprove independence, but it becomes a very heavy onus on the man who keeps making the assertion of independence.

if he can get partners in his experience, he can begin to do business with independent reality. But, of course, it is only a beginning in any case; and even the propriety of beginning now may be questioned, for the test of "co-consciousness" may be challenged by those who do not share in the co-consciousness. Should this challenge become insistent the test needs supplementation by another test; for common hallucinations and common illusions are by no means frequent.

2. The test by which hallucinations and illusions are differentiated from the perception of independent reality is what Berkeley called "coherence," which is also the test whereby we are justified in declining to set down what we experience in dreams as independently real. The full treatment of this test is not possible here, for it would involve a very long discussion of many matters and would thus take us beyond the limits of a single paper. Especially is this true of illusions as distinguished from dreams and hallucinations. Hence I will omit any further reference to illusions. Hallucinations are distinguished from "normal" experience by the fact, for instance, that the hallucinated voice of a friend is not related to a visual *sensum* of that friend as voice is related to vision ordinarily; and an hallucinated visual *sensum* is not related to tactual *sensa* as is ordinarily the case. There is not the usual "coherence."

I had thought that the test of coherence as applied to dreams is generally accepted till I saw it questioned by Mr. F. C. S. Schiller, who brings a strange objection to it.⁷ "The consciousness which condemns the dream experience is no longer the consciousness which experienced it. . . . For comparison therefore with the intelligible sequence of successive dreams, we should require an intelligible sequence *in successive lives* to make the parallel complete." Now if we had "intelligible sequence of successive dreams" as persistently as we have intelligible sequence in our waking experiences day by day, we might indeed have a problem on our hands for our waking philosophy. But when it is urged that the incoherence of dreams is not usually felt when dreaming, the reply must be made that the dreamer may, if he pleases and if he can, construct a system of philosophy which shall give realistic value to his dream *sensa*: the waking realist will promise not to follow him voluntarily into his dreams and try to prove his philosophy wrong. The realist philosophizes for men awake, and if he takes dream experiences into account, it is only because they are a part of the data which are present to him in the way of memory when he is awake, in just the same way in which his yesterday's experiences are present to him now. How this waking life's experiences and its remembered

⁷ "Humanism: Philosophical Essays," pp. 113, 114, foot-note.

dreams will be judged by some one when in the sleep of death he dreams out a philosophy, the realist prefers to leave to those who pretend to know what such dreams will be. It is a queer sort of pragmatism which tries to negative actual pragmatic tests pragmatically made in this life by bringing up the bogey of what may become of these tests when unknown difficulties may arise in an unknown life. Is there no pragmatic value in the suggestion that sufficient unto the day is the evil thereof?

3. The two preceding tests will give our idealistic friend and his assessors a starting-point of a common experience with "coherent" elements in it, which are thereby differentiated from elements in the experiences of the parties involved, that might be exclusive or incoherent. It is the coherence of these common elements of the experiences of all that forms the point of departure for a realistic supplementation of these experiences. The impulse on the part of the men concerned to get a *more* coherent world than their fragmentary experiences present to them prompts them to take the remaining steps towards realism. They proceed to make an induction. There is the debris; what does it mean? That kind of debris in the past of all the persons present has been frequently experienced in sequence upon *sensa* which we call fire. It is therefore assumed that the debris in this case has followed a fire. It is for damage done by this assumed fire that the insured wishes to get indemnity. As that fire was the object of no ascertainable experience, a place is made for the fire by postulating a world of "independent" objects, within which the fire could have occurred without waiting for the favor of being witnessed. It is this fire which the debris means.⁸

⁸ It might be well to pause here for a moment to remark that the kind of inductive reasoning mentioned here is used by every one in such a case as this and that when a result is obtained that result is accepted as representing genuine "independent" reality, at least till a *secondary* induction of the same general character is made to offset it. Thus some persons, unwilling to accept a complete independence of such reality, proceed to make a further induction from another set of facts, and conclude that there must have been *some* awareness of the reality at the time at which the reality existed. Others *cancel* the result of the primary induction by a secondary induction; they accept the fact that there was no awareness of the reality at the time at which it was by the first induction concluded to exist; but being unable to distinguish between object and awareness, they make the induction that no one else can do so; then applying the maxim that what can not be distinguished can not be separated in time, they proceed to deny the prior existence of the reality and make it merely a conceptual possibility of a perception which was not perceived. There are still other ways of discrediting the results of the primary induction, which bear witness to the versatility and ingenuity and sometimes to the ingenuousness of those who have invented them; but they all proceed by the principle of induction, similar in kind to that which realism and common sense use to establish the independence of certain objects experienced. These secondary inductions constitute the so-called arguments against realism.

4. Still another criterion may be mentioned, which perhaps is not used so much as the others, but which seems to have some pertinence here. It is the principle that differences in one class of *sensa* point to independent differences in another class, when there is question as to the independent reality of the latter, and when this question is based on the fact that the latter *sensa* are given in different qualities to different awarenesses. Perhaps the principle might be called that of the irradiation of differences. Its meaning can be made clearer by taking a concrete case in which it may be applied. I see a color red and another man sees it gray. Which is the real color? That is, which is the color the object presumably has when neither of us sees it? Both my color-blind friend and I find that behind a pane of glass which he sees as gray and I see as red we can develop photographs; while behind another pane which we both see as gray we can not develop them. My experience of color difference in the two cases seems to be corroborated by our joint experience of difference in the behavior of the two glasses when white light is passed through them. Again, the angle of refraction of two rays of light which I see as one red and one gray and my friend sees as both gray are experienced by both of us as different. The gray color, therefore, in the one case is set down as "subjective," that is as existing only when my friend and such as he see it. The red color is set down as "objective," that is, as existing when neither is aware of it, because the supposition of its real color difference from what we both see as gray comports with its different *behavior* even when neither of us is present.

In any case the belief in the "objectivity" is merely a tentative belief, a working hypothesis. It is of course possible that both colors, and all colors in fact, are "subjective." But Bradley has very convincingly shown that "bare possibilities" are not a safe foundation on which to build a doubt. Reasonable doubt needs "motivated possibilities," and the realist contends that the motives that have been adduced for the possibility of the subjectivity of color are inadequate. But the phrase "working hypothesis" may well give us pause, as capable of being construed to be a confession of an implied idealism. But I do not believe that such a construction is admissible. The realist is not trying to make things tentatively independent; he is merely trying to give reasons for the faith that is in him that they are independent. They either are or are not independent; his belief does not alter the facts, Professor Royce's dialectic to the contrary notwithstanding. Except in the sense in which we may now be directly aware of things as they existed when they set the intermediating agencies at work which result in the

brain reaction correlated with the awareness of them,⁹ the very nature of the case makes it impossible for the realist to verify his belief by appeal to immediate experience of independence; for if he were to experience the things whose independence he asserts, and experience them *at the time* at which they existed independently, this very experiencing would make them cease to be independent in the sense in which he is contending for independence, that is, it would make them exist *at the time at which there is awareness*. The realist, therefore, has no illusions on this point. He is not trying to see directly the back of his head. He knows he can not do it, but he believes, however, that what he can not see he can believe in with good reasons. He can live *as seeing* that which is invisible; in his realism he walks by faith and not by sight.

It will have been noted long ere this that such a realism is pragmatic in a very emphatic sense. The criteria used for distinguishing independent reality from reality which is not independent are *pragmatic* criteria. Again, it will have been seen that "*immediate experience*" furnishes the *qualia* from among which the pragmatic criteria help us pick out some which can be consistently assumed to have independent reality. Thus this independent realism, if I may so call it, *combines pragmatism with immediatism*. In this respect it agrees with the views of Professors James and Dewey, to whom, by the way, I wish to say that I owe more than my recent criticisms of them might lead one to suppose. But this realism can not remain satisfied with the statement that "everything is what it is immediately experienced as being." This statement, while true so far as it goes, is only the beginning of whatever wisdom there may be in realism. In addition to the things that are, we recognize also things that have been and things that shall be. Of these realism can not consistently say that, *so far as they were or will be independent*, they were or will be whatever they are at any time experienced as having been or going to be. For there are many "immediate experiences" of things past and things to come which contradict each other, and besides there are many such experiences which are not pragmatically confirmed: indeed, there are many "immediate experiences" which are pragmatically invalidated. For instance, the "immediate experience" which most geologists till recently had of the interior of the earth as molten seems to be pragmatically negated by what on the one hand we know of the transmission of undulations through solid and liquid media, and by what on the other hand we know of the transmission of earth tremors through the interior of the earth. This illustrates the fact that the qualities which, in our theories of the nature of independent reality, we from

⁹ See this JOURNAL, Vol. IV., pp. 599 ff.

time to time refer to such reality, can not all be rightly accepted as actually independent.

We therefore combine immediatism and pragmatism by maintaining that immediate experience furnishes us with all sorts of *qualia*, and that of these *qualia* only some may be properly assumed to have independent reality. Realism then postulates that *everything is or was or will be what it is ever immediately experienced as being or having been or going to be, when this experience is pragmatically confirmed, and when all such immediate experiences have been so adjusted to each other that the independent realities we assume on the basis of these experiences shall not have at the same time contradictory qualities.* The immediately experienced *qualia* which are ruled out by the pragmatic criteria are then not regarded as independently real, and are called subjective.

The system of independent realities, connected together in such ways as are shown in the connections of objects of immediate experience, and consisting of such *qualia* as we are pragmatically justified in regarding as independently existing, constitutes so much of the *physical world* as is known to us. This world is constantly changing and more of it is every day coming to be known by us. From the fact that our knowledge of it has grown in the past we infer that our knowledge will grow in the future, and that therefore our present knowledge does not compass it in its totality, if totality it has. But as the only theoretical reason we have for assuming our present ignorance of any part of this physical world is that every day we are coming to *know* what we were formerly ignorant of, and as the only practical reason we have for this assumption is that what we know of the physical world does not form a completely coherent whole and that we therefore need more *known* reality to make that world coherent, it is illogical and impractical to assume that what lies beyond our present knowledge is in its nature *unknowable*. Its knowableness is at the very bottom of our assumption of it at all. In fine, there is no reason to suppose that there is anything real which is of such an ultimately cryptic sort that it could not become under any conceivable circumstances an object of awareness.

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REVIEWS AND ABSTRACTS OF LITERATURE

Die Melancholie; ein Zustandsbild des manisch-depressiven Irreseins.

GEORGES L. DREYFUS. Mit einem Vorwort von Hofrat Professor Dr. Emil Kraepelin. Mit 2 Kurven im Text. Jena: Gustav Fischer. 1907. Pp. vi + 329.

This is an important contribution to psychiatric method. What the

author has done is to analyze the cases, 81 in number, plus 4 doubtful, which during the years 1892-1906 have been inmates of the Heidelberg clinic under the diagnosis of *melancholia*. Of these 46 were living at the time of the research, the remainder deceased. The attempt has been made to follow the course of these cases since their discharge, as well as the handful of survivors not yet recovered from the original psychosis. Personal investigation of the survivors was made in 38 cases; in 8 others, whom it was impracticable to visit, a history was indirectly obtained; and for the deceased such information as possible was obtained from living connections. The result is seriously to undermine—in the mind of the author, at least, to destroy—the position of the Kraepelinian melancholia as a disease entity; and in his introduction Kraepelin himself accepts the substance of this conclusion.

Aside from the light that this investigation sheds on a vexed question in psychiatry, it is noteworthy as practically the first extended application of statistical methods in its field. In most cases such a task would be hedged about with almost prohibitive sources of error. The different view-points of the various psychiatric schools combine with the progressive changes in diagnostic policy within the same school to render a statistical study of the psychoses a most arduous task. There is needed the happy combination of a fairly continuous, not to say competent, diagnostic policy extending over a period sufficient to include the number of cases requisite for a reliable study. In the present stage of psychiatry, it is true that continuity and competence of diagnostic policy are not always compatible, as Dreyfus's figures themselves show. Nevertheless, it is probable that few institutions could be found better suited to the purposes of such an investigation than the Heidelberg clinic from which the mass of the material is drawn.

The admissions to this institution are mainly from the agricultural class, and almost invariably of low intellectual level. The investigation was facilitated by the fact that the psychosis under consideration is one developing by definition only in the later years of life, when the patients, at best from a rather stationary class, were not likely subsequently to move away from the neighborhood. It is interesting to note the change in the attitude toward melancholia indicated in the progressive loss in frequency with which the diagnosis is put. Under Kraepelin's administration, the number of melancholias shrunk from 11 out of 258 admissions in 1892 to 1 out of 400 admissions in 1902. Then, interestingly enough, at the cessation of Kraepelin's more direct influence¹ the number rises again to 5 and 4, but during 1905 and 1906 only 1 is recorded, the number of admissions having meanwhile risen to 531 and 579. The main loss is naturally to the manic-depressive group. The later diagnoses are obviously of greater importance to the problem, for only under the most exclusive features of involution melancholia would the diagnosis have been placed. The single case above mentioned has since developed typically

¹Kraepelin mentions in his introduction that he has not yet made the diagnosis in Munich.

manic-depressive symptoms, and it is noticeable that as the diagnoses of melancholia decrease in number, so also do the diagnoses which later have to be altered. The author also calls attention to many special sources of error in the investigation which can not be enumerated here, but which indicate the thoroughness and caution with which the material has been examined.

In the opening chapter the author first traces the history of the term "melancholia," from its beginning with Hippocrates, through Pinel, Rush, Zeller and Leidesdorf, to Guislain and Griesinger, under whom the conception may be said to reach its broadest significance. Reaction against this view-point begins in the work of Kahlbaum, Krafft-Ebing, and Lange, who tend to distinguish a melancholia proper from the melancholic colorings of other psychoses. As early as 1878 we find Blandford calling attention to the fact that this melancholia is preeminently a disease of the involution period. The evolution of the Kraepelinian standpoint, particularly in its relation to the manic-depressive group, is naturally a special theme with the author. From its inception in the second edition he follows it through the various succeeding ones, the main points of which are perhaps the stressing of the differential diagnostic value of the presence or absence of retardation in the fourth edition, the negative definition of melancholia as an involution psychosis in the fifth, and the final development of the diagnostic entity of manic-depressive insanity in the sixth. The contemporary criticisms of Kraepelin by Jolly, Schott, Ziehen, Westphal, Pilez, and others are also summarized, their general tendency being to maintain that Kraepelin's melancholia is not a disease that can be so closely confined to the involution period, and that the clinical picture is not sufficiently differentiated from that of manic-depressive depression. This, as we see, is in part the conclusion which the author himself reaches. With the interpretations of Thalbitzer, however, he inclines to disagree.

Indeed, so far as the above-mentioned figures are significant, it can be seen that the involution melancholias are already tending to lose themselves in the manic-depressive group. Even Kraepelin's latest conception of the psychosis is a negative one—the term is to include those diseases of the involution period that do not find a place among temporary phases of the other psychoses. From the depressions of the manic-depressive group it is to be distinguished by the presence of anxiety and agitation, and especially by the absence of retardation. Moreover, single depressions without previous attacks constitute a species in the matter of frequency at the involution period, while there are no corresponding manic phases.

Certain of these differentiae the author seeks to turn on grounds of previous observation. Retardation may also be absent in typical circular depressions, and attention is called to the fact that Kraepelin, after describing the process of retardation, delineates a phase of the involution picture in much the same words. The *Stimmungsschwankungen* independent of outside influences might be interpreted as characteristic manic-depressive

symptoms. The statistical plea of the disproportionate heaping up of depressions at the involution period is met by the increase at the time of typical first attacks of the manic-depressive type. If the involution melancholia recovers, this is *prima facie* evidence of its identity with the manic-depressive group, especially if it goes through a light manic phase, as certain of them do; if it dement, this may be ascribed to the over-laying of the original psychosis by arteriosclerotic conditions. The author's summing up is in the following words:

"Wir formulieren also unsere Ansicht dahin: Die von Kraepelin geschilderte Melancholie (*Melancholia simplex*, *Melancholia agitata*, depressiver Wahnsinn) ist ein Zustandsbild des manisch-depressiven Irreseins. Die Melancholie hat die gleiche günstige Prognose wie die zirkuläre Depression, die nur durch das Hinzutretenkönnen arteriosklerotischer Hirnveränderungen einigermassen getrübt wird, ganz ebenso wie die der manischen Erregungen im höheren Alter. Die erheblichen körperlichen Schädigungen, besonders des Herzens, welche naturgemässe Folgen der schweren Psychose sind, bedingen nicht allzu selten den Tod infolge körperlichen Leidens nach relativ kurzer Dauer der Krankheit. Die senile Depression ist kein selbständiges Krankheitsbild. Führt eine Melancholie zum Schwachsinn, so handelt es sich um eine zirkuläre Depression in Verbindung mit einer arteriosklerotischen Hirnerkrankung. Die senile Demenz, die mit trauriger Verstimmung, Unfähigkeitsgefühl, hypochondrischen Ideen, nächtlichen ängstlichen Erregungen usw., einhergeht, zeigt von Anfang an die klinischen Symptome arteriosklerotischer Hirnerkrankung und gehört zum Altersblödsinn. Sie ist, ganz seltene Fälle ausgenommen, von dem manisch-depressiven Irresein scharf abzutrennen."

So much for the interpretation of previous material. We need not follow the author closely through the nearly two hundred pages of histories and detailed analyses of the cases observed. As he well points out, the clinical pictures must have been in the great majority constructed with a view to maintaining the independence of involution melancholia, so that there is small danger that the presence of manic-depressive symptoms is here exaggerated. Suffice it to say that in practically every case the author is, from the histories and through his personal after-investigations, satisfied that the psychosis should be included in the manic-depressive group through the presentation of typical manic-depressive signs; as, previous attacks, after-attacks subsequent to a first attack diagnosed as involution melancholia, the actual presence of retardation, flight of ideas, *Stimmungsschwankungen*, irritability, etc. In this connection it may be well to quote the following table of the 81 cases here studied:

I. 34 personally investigated:

Manic-depressive insanity	30
Manic-depressive insanity plus arteriosclerosis	1
Probable constitutional depression plus manic-depressive insanity ..	1
False diagnoses: Alcoholic hallucinosis, hysteria	2

II. 8 not personally investigated:	
Manic-depressive insanity	6
Manic-depressive insanity very probable	2
III. 39 deceased:	
Manic-depressive insanity	30
Manic-depressive insanity plus arteriosclerosis	3
Manic-depressive insanity possible	2
Manic-depressive insanity plus arteriosclerosis possible	2
Undiagnosed	2

This is the sum and substance of the third chapter, the detail of which has its main interest for the clinical student. The remainder of the volume is occupied with the consideration of the results.

Firstly, it does not appear that the results from the group of survivors differ sufficiently from those obtained from the deceased to suggest that subjective factors in the *Nachuntersuchung* could have essentially altered them. Many of the cases, as has been noted, come with previous depressions, and would hardly now be diagnosed as involutions anyway. One may admit also the manic-depressive character of those cases in which a manic phase succeeds a first depression at the involution period. There remain the cases of a single attack terminating in recovery, dementia, or death. Regarding the first of these, Dr. Dreyfus argues that the single attack is no criterion, because acknowledged typically manic-depressive attacks may occur only once, and these, indeed, especially at the involution period. Now since, according to the data studied, there exists in the symptomatology no essential (*stichhaltig*) difference between the single melancholia, the recurrent melancholia, and the melancholia-mania, there is no reason why they should not be assigned to the same group of manic-depressions. No cases terminating in partial recovery (*Heilung mit Defekt*) were found. The overlaying by arteriosclerotic dementia occurred in 8 per cent. of the cases. It is to this cause that the author attributes the final dementing of certain cases, which, of course, has nothing directly to do with the relation of the involution melancholia and manic-depressive insanity.

However, Dr. Dreyfus is still willing to assign to the involution cases a certain independence within the manic-depressive group. The cases which come on at the involution period may receive from this fact a certain specific coloring. The attacks are likely to be longer and severer, though not sufficiently so to constitute a separable species. It is possible, also, as the author mentions later, that some difference may exist in the character of the delusions. The prognosis is good, as good as that for the conventional forms of manic-depression save for the fact of intercurrent affections of the circulatory and respiratory systems (arteriosclerosis and tuberculosis). Of the 79 cases (*i. e.*, 81 less the 2 undiagnosed) 66 per cent. were recovered, or recovering, at the time of death, 8 per cent., as has been noted, became arteriosclerotic, 25 per cent. died, unrecovered, of intercurrent diseases and suicide. The author does not seem, however, to have compared the outcome of the involution melan-

cholia with that of manic-depressive attacks at the involution period, which is here the essential point.

From the fact that the number of deaths decreases the longer the psychosis has lasted, the author suggests the inference that the first few years of the illness are the more dangerous to life; this is hardly justifiable, because natural selection might weed out earliest those of least constitutional resistance. Contrary to some previous opinions, the cases showed no especial relation between age and duration of the attack, but recovery is usually less rapid in those whose first attack comes at the involution period. Heredity appears in about 48 per cent., exciting cause in 34 per cent. The latter figure is probably too low, because exciting cause was found in 56 per cent. of the living, but only 15½ per cent. of the dead, where it would be more difficult to trace. Twenty-eight per cent. had neither heredity nor cause, 15 per cent. had heredity without cause, 25 per cent. had cause without heredity, 31 per cent. had both heredity and cause. Cause was found in 32 per cent. of the men, and 37 per cent. of the women. The author admits that this difference in favor of the more affectable sex is too small for significance, but there are also a number of other factors which must be considered, *e. g.*, the presence of heredity, the exposure to and its relation to the intensity of the causes, etc. Fifty-four per cent. had previous attacks, which figure is also too low.

From this point on we are again concerned especially with clinical observations. Here we obtain an insight into the more precise criteria upon which Dr. Dreyfus has based his sweeping conclusion. He holds that, if one approaches the involution cases from the proper point of view, there will be no difficulty in finding typical circular symptoms. Of course the subjective factor in this procedure needs not to be brought to mind here. In some cases he tends to a reinterpretation of already observed symptoms. Thus the daily rhythm so characteristic of manic-depressive depressions may also in the involution cases be similarly interpreted, and has not been allowed its full diagnostic importance. Irritability he finds in the sensitivity of the prodromal period, and in the complaining or active bewailing of their condition during the psychosis itself (*Erregbarkeit des depressiven Affects*). Distractibility even to the point of flight is to be noted in certain cases. Talkativeness and delusions of grandeur are also to be mentioned as manic symptoms. This brings us to the vexed question of retardation, which is undoubtedly often the principal factor in differential diagnosis. The author claims, however, to have found traces of it in the majority of his 32 personally followed-up cases, and again points out that the chances of it being missed are much greater than the chances of it being mistakenly noted in the histories. Many cases also show pronounced inadequacy, if this may be regarded as a species of retardation, appearing, on account of the class of patients, rather on the motor than the intellectual side. Absurd delusions he finds less frequently than Kraepelin, and doubts their connection either with advanced age or with the prognosis. He opposes the use of the term

"hysteromelancholia" as implying the overlaying of a melancholia by hysteria, whereas the reverse is the more probable condition.

Kraepelin speaks of a specific dementia into which nearly half his cases go. Of Dreyfus's cases only the 8 per cent. of arteriosclerotics demented. This great discrepancy finds its explanation in the observation that several cases exhibit during the course of the psychosis a fairly typical dementia picture, and yet subsequently recover, even after their discharge from treatment. The lack of interest, insight, and orientation in a deep depression is not necessarily dementia, however superficially similar it may be.

Now so far as the immediately utilitarian value of the diagnosis of involution melancholia is concerned, Dr. Dreyfus may probably be said to have made his point, and the figures show that Heidelberg in general was coming around to the same conclusion. Nevertheless, the question of relationship is far from closed. Dr. Dreyfus has made a fruitful comparison of involution melancholia with the conventional picture of manic-depressive insanity. Even more fruitful should be the comparison of the involution depressions at large, independent of their diagnosis of involution melancholia or manic-depressive insanity, especially those occurring for the first time. Is it possible in certain cases for the involution period to give the psychosis a specific coloring? This is the crux of the whole matter, beside which the question of disease entities, if as independent of prognostic value as Dreyfus finds it to be, is a matter rather academic than clinical. The next point of attack would seem to be that above mentioned, especially in a more precise examination of the symptomatology. The most important question remains that of retardation, upon which the present study hardly sheds decisive light. Indeed, it may be questioned whether the relation of this symptom to the depressions is capable of much further study by unaided clinical observation. The experimental opportunity would seem to be obvious.

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JOURNALS AND NEW BOOKS

ZEITSCHRIFT FÜR PSYCHOLOGIE UND PHYSIOLOGIE DER SINNESORGANE. September, 1907. Band 46. Heft 2. *Abteilung für Psychologie. Das Gesetz von der Erhaltung der Energie und die Annahme einer Wechselwirkung zwischen Leib und Seele* (pp. 81-122): ERICH BECHER. — A discussion of the significance for theories of the interaction of body and soul of the experiments by Rubner, Laulanie, and Atwater on the conservation of energy in psychical organisms. These experiments are held to prove that the law of conservation of energy holds for dogs and human beings. From this it is argued that any interactionary theory which holds that psychical processes are forms of energy is untenable. *Überblick über die Geschichte und den gegenwärtigen Stand des psycho-physiologischen Problems der Augenbewegungen* (pp. 123-

141): R. HERBERTZ. — A history of the attempts to find a principle or law of eye movements. In view of the varied results achieved, the author asks if the whole striving after a principle of eye movements is not thoroughly erroneous, and whether the problem of eye movements would not receive more psychophysiological import if we were to ask what function and significance have eye movements in the psychophysiological processes of optical perception. Points out that the recent method of photographing eye movements gives us an answer to this general question. *Literaturbericht*. G.-H. Luquet, *Idées générales de psychologie*: GIESSLER. *Eine skandinavische Zeitschrift für Psychologie*: AALL. Harrwitz, *Adreßbuch der deutschen Präzisionsmechanik und Optik*: W. A. NAGEL. Ewald and Jäderholm, *Auch alle Geräusche geben, wenn sie intermittiert werden, Intermittenzöne*: SCHAEFER. Anna Wyczolkowska, *A Study of Certain Phenomena concerning the Limit of Beats*: MAX MEYER. Alrutz, *En Apparat för Undersökning af Smärtsinnet*: AALL. Hoefer, *Beitrag zur Lehre vom Augenmass bei zweiäugigem und bei einäugigem Sehen*: AALL. Bourdon, *Influence de la force centrifuge sur la perception de la verticale*: W. STERN. G. H. Sabine, *The Concreteness of Thought*: LIPMANN. Kr. B. R. Aars, *Til Erkjendelsens Psykologi*: AALL. G.-H. Luquet, *Logique rationnelle et psychologisme*: GIESSLER. H. Höffding, *Begrebet Vilie*: AALL. *Et al.*

Kraus, Oskar. *Neue Studien zur Aristotelischen Rhetorik*. Halle a. S.: Max Niemeyer. 1907. Pp. v + 117.

Merten, O. *L'état présent de la philosophie*. Paris: Charles Amat. 1907. Pp. 118.

Rey, A. *Leçons élémentaires de psychologie et de philosophie*. Nouvelle édition revue et considérablement augmentée. Paris: Édouard Cornély & Co. 1907. Pp. 1042. 9 fr.

Rugh, Charles Edward; Stevenson, T. P.; Starbuck, Edwin Diller; Cramer, Frank; Myers, George E. *Moral Training in the Public Schools*. The California Prize Essays. Boston: Ginn & Co. 1907. Pp. 203.

Wright, William Kelley. *The Ethical Significance of Feeling, Pleasure, and Happiness in Modern Non-Hedonistic Systems*. Philosophic Studies: No. 1. Edited by James H. Tufts. Chicago: The University of Chicago Press. 1907. Pp. 91. 50 cents net.

NOTES AND NEWS

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS

DEAR SIRs: My attention has been called by Professor James and Dr. Morton Prince to a review in your JOURNAL for November 7 by Dr. Adolf Meyer of my "Studies in Psychopathology." Dr. Meyer graciously stamps my work and theories based on it as "metaneurology,"

"metaphysiology"; he tells of "the closing chapter with its many paradoxes," of "the feeling of awe and wonder at the many things of which one might become the victim," of my "premature stabilization," and of "incrustations of neurologizing tautology," and similar pleasantries. It is not my present purpose to enter into a discussion with Dr. Meyer as to the fairness and validity of his review, but I wish you would kindly permit me to make at least one correction of a statement of his, typical of the rest. Dr. Meyer quotes from my paper the following passage: "*All the remedial work and all the great work depend on the capacity of the nervous system to accumulate energy.*" The generalization is interesting and well worthy of "Alice in Wonderland," but I must really decline the honor of its authorship.

Yours respectfully,

BORIS SIDIS.

BROOKLINE, MASS.

THE *Psychological Clinic* for November 15 reports: "The psychological training school, or hospital school, seeks to obtain one or more student assistants. The assistant will live at the school and receive instruction in psychology, in nursing, and in special work with backward children, as part compensation. Those who graduate from the hospital school as trainers of backward children should be able to obtain for the training of private cases the compensation of trained nurses, in the neighborhood of one hundred dollars a month and expenses. The work is of a character to recommend itself to college graduates who require financial assistance while pursuing graduate work in psychology or sociology. Inquiries should be addressed to Dr. Lightner Witmer, University of Pennsylvania, Philadelphia, Pa."

ACCORDING to the *Athenæum*, the third edition of Frazer's "Golden Bough" will differ considerably from the preceding editions. Owing to the bulk of the present material, the author has decided to break up the work into a series of monographs distributed probably as follows: I., The Magic Art and the Evolution of Kings; II., The Perils of the Soul and the Doctrine of Taboo; III., The Dying God; IV., Adonis, Attis, Osiris; V., Balder the Beautiful. Of these sections, number one and number four have been published, number one with the title "Lectures on the Early History of the Kingship." It is hoped that the entire work will be ready by the end of 1909.

THE Prussian Academy of Sciences has granted to Professor von Wilamowitz-Moellendorff 750 marks for the photographic reproduction of the manuscripts of Plutarch's works, and 500 marks to Dr. Kalischer for his studies of the organs of hearing.

DR. CHARLES E. CORY is in charge of the Department of Philosophy in Washington University, St. Louis, in place of Professor A. O. Lovejoy, absent on leave during the year 1907-8.

SIR OLIVER LODGE has been made president of the Faraday Society.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE ATTACK ON DISTINCTIONS

TO discover differences and contrasts between things that resemble each other and to find points of similarity between dissimilar things are two kinds of mental activity which, although they appear opposite and contrary, are often found united. To employ them by turns is no less indispensable to progress in any kind of knowledge than are the two opposite movements of a piston to the rotation of the wheel which it sets in motion.

Their relative importance, however, varies in the different fields of research, and as there are sciences, or phases of scientific development, in which the first predominates, so there are others in which the tendency prevails to distinguish or establish oppositions and contrasts among facts instead of connections or analogies.

It may be asked into which of the two classes in particular do the speculations of philosophers fall?

If the scholastic precept "*Distingue frequenter*" seems to assign in these greater importance to the determination of differences, on the other hand the usual conception of philosophy as the search for the highest generalities, the universal, the absolute, etc., would seem to justify a diametrically opposite conclusion.

And of this latter conclusion it may be thought that we have further confirmation when, instead of attending to what philosophers have told us of their doings, we proceed to examine what they have actually done or are wont to do.

As a matter of fact, the form under which results of philosophical inquiries appear to us is not that of the recognition or determination of fresh distinctions and differences, but, on the contrary, that of the criticism or rejection of distinctions commonly admitted.

Before drawing from this fact a conclusion favorable to the conception of philosophy as an activity predominantly unifying and aiming at the suppression of every distinction and opposition, it will, however, be opportune to examine the different modes by which philosophers have proceeded in their struggles against distinctions

and differences. These various modes, as it seems to me, may be divided into the three following classes:

1. Those which consist in showing that there exists no precise line of demarcation between facts which are regarded as distinct, *i. e.*, in showing that the transition from one set to another is made by a series of intermediate gradations or shadings, in which the characters supposed to be distinctive are reconciled and the contrast between them disappears or becomes intangible.

2. Those which consist in showing that the properties in which the difference between the two classes of facts in question is supposed to consist, are possessed in equal degrees by both these classes, or by neither. As, for example, when the distinction between *egoism* and *altruism* is disputed by saying that even the so-called altruistic motives or aims are not effectual except in so far as those who are stimulated to action by them regard the result of the action as desirable and pleasing and regard its non-realization as a pain or want of satisfaction to themselves.

3. Those which consist in showing that the property, or properties, whose presence or absence is taken as a criterion of the distinction can be regarded, at the same time, as possessed and not possessed by any one of the objects in question according to the choice of the other objects with which we compare it. This is the case of the so-called *relative properties*, or *properties of relation*. So, for example, with numbers, the contrast between the words *preceding* and *succeeding* does not correspond to any distinction among them inasmuch as the fact that a number follows another does not prevent its preceding in its turn the one that follows itself.

Now, as to the processes of the first class, it is evident that the distinctions which they aim at destroying vanish only to reappear under another form, or even to return—like the demon, in the Gospel story, cast out of the man possessed—accompanied by other distinctions more powerful, and able to resist every further effort of dissolving analysis.

For instance, in answer to one who thought that the antithesis between “unity” and “plurality” could be destroyed by saying that from the *one* transition may be made to the *many* by successive additions, it might be observed that this is equivalent to a recognition that there are so many classes of *plurality*, *i. e.*, that, besides the distinction between the *one* and the *many*, there are others between the different *manys*, and that, therefore, by attempting to destroy the distinction in question he at once brings a hornet’s nest about his ears, like the monkey in the fable who, being angry with his image reflected in a mirror, broke it in pieces and only

succeeded in multiplying the figure which he had expected to annihilate.

Nor is it to be believed that more success attends attempts of the second class, those by means of which the value of a distinction is disputed by showing that some of the characteristics which were supposed to differentiate the two classes established by them are common to both.

A typical example on this point is offered us by the criticism of the distinction between the mere succession of two facts and what is expressed by saying that one of them has *produced*, or has been the *cause* of, the other. The result of such criticism has been to make it more apparent what are the distinctive characteristics whose possession confers, on the successions to which the names of "cause" and "effect" are applied, such superior importance in comparison with all the other classes of successions that experience presents to us.

"To say that a given fact is 'produced' by another," observe the critics of the idea of cause, "means nothing more than this: that the first has been succeeded by the second and that we have reason to believe something similar to the second will happen every time that anything happens similar to the first: and that something similar to the first has happened whenever anything happens similar to the second."

But surely this does not imply that all successions are of the same theoretical and practical importance. It is rather an acknowledgment that, among them, are some whose investigation contributes, in a particular way, to widen the field of our previsions and actions, and which, just on that account, deserve to be kept distinct from all others—whatever, on the other hand, may be the name that is adopted for this purpose.

The case of distinctions to which only greater prominence is given by every effort directed to the obliteration of the line of demarcation established by them is not the only one to be considered among those of the second class, mentioned above. Another case, no less important, is that of distinctions in regard to which such efforts, although they do not succeed in destroying, nevertheless succeed in *shifting*, the aforesaid line of demarcation, carrying it on to intersect one or other of the two classes which it at first separated.

Such shifting, however, is not followed by the complete disappearance of the original line of separation, but in most cases only by a diminution of its importance in comparison with the new one which is introduced.

If the latter absorbs and attracts to itself some of the offices of

the first one, this may, nevertheless, still keep some others of them, and eventually acquire new ones which it did not possess at first. It not seldom happens that a distinction, by such successive transplantings and shiftings, gives rise to a series of subordinate distinctions or "segmentations."

The position which is finally assumed by the original line of demarcation corresponds ordinarily to a distinction of greater importance than those corresponding to the successive positions abandoned by it. Sometimes, however, the distinction in question, after having served to produce a series of others, more or less important, is finally reduced to cutting, so to speak, in the void, like a blade which has under it none of the material which it is intended to cut.

Of all the various changes that ordinarily accompany what we may call the *shifting of distinctions*, we have an example in the history of the distinction between *appearance* (phenomenon) and *reality* (essence, noumenon).

The very word "phenomenon," from its use as a technical term in Greek astronomy denoting the contrast between the "apparent" motions of the sun and the stars in the celestial sphere and their real motions in space, seems to have been very soon transferred by philosophers (Democritus) to denote, by analogy, the contrast between the properties of bodies which "appear" to our senses (colors, flavors, etc.) and their *real* structure, consisting of the respective positions and motions of the indivisible particles (atoms) of which they were supposed to be made up.

The word thus assumed the fresh office of distinguishing the properties which in later times were called the *secondary* properties of bodies from the so-called *primary* properties (such as form, resistance, weight, etc.). But even here a new shifting could not be long in taking place. Philosophers did not fail to ask themselves what reasons there were for conferring any privilege on these last properties on account of their being perceived "by means" of our touch or muscular contractions instead of "by means" of our eyes or our palate. To believe that a thing which we *feel extended* is *really extended*, observed they, is as unreasonable as to believe that a thing which we *see* red or green is "really" so, in itself, independently of our visual organs.

To find a new employment for the distinction, which thus became useless, two ways were open. It was possible, in conformity with the common use of the words, to employ it in the humble office of distinguishing the impressions of the man awake, with his senses in their normal condition, from those of one under hallucination. That would have led philosophers to a clearer recognition of the

properties by which the former are distinguished from the latter (coherency, their being common to more than one person, their ability to be foreseen, etc.). Unfortunately, other prepossessions (especially sentimental ones) spurred on philosophical speculation in a diametrically opposite direction. From the admission that all properties, known or knowable, of bodies were alike "apparent," the conclusion was inevitably drawn that to ask whether bodies do really exist, would be to raise a question beyond the limits of the capacity of the human mind—a question to be classed among the insoluble "enigmas" of the universe. With this last evolution, the word "phenomenon" finally came to denote anything of which one might speak, knowing what he is talking about, and its contrary (noumenon, thing in itself) to denote nothing but our desire to have at our disposal a word that has no meaning.

It remains for us to consider the third of the three methods employed by philosophers in the criticisms of distinctions. It consists in claiming for a distinction concerning comparisons or relations between different objects a sense independent of the consideration of such comparisons and relations, and in regarding the fruitlessness of the attempts directed to such an aim as a proof of the unreality and invalidity of the distinction in question.

An example will explain better how this comes about. It is difficult to find, in the whole field of logic, a distinction which is so radical and important as that between affirmation and negation. And this is so, notwithstanding the fact that to ask oneself whether a given proposition is affirmative or negative, has as little sense as to ask oneself whether an object is larger or smaller without stating with what other object one wishes to compare it. There is, in fact, no affirmation that can not be regarded as the negation of some other affirmation, and if we disregard grammatical niceties, it is just as exact to say that every affirmation is a negation as to say that every negation is an affirmation. But shall we then have to say that there is no difference between affirming *anything* and denying *it*? The true distinction, therefore, is not between propositions of one class and propositions of another, but between *every* proposition and the *corresponding* negation, in the same way as the words "east" and "west" do not express any quality of the regions to which they are applied, but only indicate that these regions are in a given situation with regard to each other.

The illusions occasioned by the above-mentioned tendency to interpret a sentence which expresses a relation between different objects as if it must have a meaning for each of them taken separately, has some affinity with those exemplified by that class of

sophisms which scholastic logic describes as taking what is said *secundum quid* as if it were said *simpliciter*, *i. e.*, the sophisms consisting in passing from an affirmation which is only true under certain restrictions, or in relation to given circumstances, to another in which such restrictions are lost sight of.

The only difference between the one case and the other is this, that, in our case, the conclusions arrived at can not even be false, inasmuch as the sentences which enunciate them have no meaning at all, as if one were to say, for instance, that two quantities were proportional without saying to what other two, or that a straight line was perpendicular without saying to what straight line or superficies.

Among the most characteristic and instructive cases of this class must certainly be placed those furnished by the recent discussions on the axioms of mechanics, especially on the meaning of the law of inertia.

The usual way of enunciating this law is liable to the objection that to assert that a body is moving in a straight line and with uniform motion can have no meaning, unless we determine:

1. To what body, supposed to be fixed, the successive positions of the body declared to move in a straight line are to be referred. A straight line drawn on a sheet of paper, while it is moving, does not imply a rectilinear motion of the point with which it is drawn; and, *vice versa*, given any motion of a point, the possibility is never excluded of so moving a sheet of paper in relation to it as to obtain a straight line upon the paper.

2. What is the measure that we adopt for *time*; in other words, by what standard are two successive intervals of time to be judged as equal or unequal. For instance, according as we choose for that purpose the apparent motion of the sun or that of the fixed stars, the same motion will appear uniform or not uniform; and no appeal can be made here, as in the case of two persons whose clocks do not agree, to any common criterion, since it is just on the choice of the criterion that the dispute turns, *i. e.*, the choice of the "standard" motion by which all others shall be measured. To say that the motion adopted as "standard" is uniform, without saying *with regard to what other motion* (just as, in the case of points of reference, to say that a body is stationary without saying *in regard to what other bodies*), is as unreasonable as to say that a man is a "contemporary" without saying of what other person.

Attempts have not been lacking to draw—from the admission of the dependence of the law of inertia on the choice of points of reference and of a fixed measure of time—the conclusion that such a law

is only the result of a convention and does not correspond to any real fact, as if the very *possibility* of choosing points of reference and measures of time, in regard to which the law of inertia subsists, were not itself a fact: a fact of which we only take advantage in order to construct our science of mechanics, in the same way as we take advantage of the weight of lead to make a plumb-line, or of the instability of certain chemical compounds to make lucifer matches. If the world in which we live did not furnish us with this *fact*, no choice of conventions could combine to create it, or even to conceal its absence. The only difference between it and the more ordinary facts of our experience consists in its complexity, which is due to its implying the consideration, not only of the motion of a body with regard to another body, but also the comparison of one motion with another motion.

Distinctions based on properties that can at the same time be said to be possessed or not possessed by a given object, according to the other objects with which it is compared, are so far from being less important than others that they even form the principal object of scientific research, and tend ordinarily to acquire more prominence and importance in a science in proportion to the growth of that science in precision and power.

To prove this, we need only observe the prominent place that distinctions of this kind occupy in the sciences to which mathematical methods can be applied. To the example from mechanics, mentioned above, many others might be added no less instructive, from the distinction implied by the idea of "mass" to the more complex distinctions which come into play in other branches of physics and presuppose the choice of even more artificial points of reference and of many units of measure. The special feature of such distinctions is that the words which express them can only be defined indirectly, *i. e.*, by stating the meaning of a whole sentence in which they appear, as is the case, for instance, with the word "ratio" (*λόγος*) as used by Euclid, which he only defines by explaining the meaning of the assertion that the two quantities "have the same ratio to each other" as two others.

After having thus passed in review the various methods employed by philosophers for the criticism of distinctions, and having stated how each of them leads to a result diametrically opposite to the one at which it aimed, *i. e.*, leads to the increase rather than the decrease in the number and importance of the distinctions concerned, it will perhaps not be useless to consider some of the consequences which would result from the more deliberate and systematic applica-

tions of such methods to some of the most frequently discussed questions of contemporary philosophy.

Let us take, as an example, the controversy between determinists and their opponents.

Taking as a point of departure what has been said before about the idea of *cause*, and keeping in mind a principle that both contending parties agree in admitting, viz., that, properly speaking, there are no facts that *repeat* themselves (in spite of appearances due to our disposition to notice only differences interesting to us), but only facts which have more or less resemblance to one another, the conclusion is inevitable that when we say the *same* causes are always followed by the *same* effects, what we mean is, in substance, this: that *effects* which *resemble* one another constantly succeed *causes* which *resemble* one another.

What is called the "principle of causality," in so far as it asserts nothing but the existence of certain resemblances among facts whose antecedents resemble one another, is, therefore, no more incompatible with a certain degree of indeterminateness in the "effects" of given "causes" than, for example, the laws of biological heredity are incompatible with the occurrence of *spontaneous* individual divergences and variations among the descendants of the same progenitors.

To say that the effect of a given cause is determined, can only mean that *some* of its characteristics are determined, in other words, that a class, more or less extensive, is determined, to which it must belong. Therefore, the only difference there can be between determinists and their opponents consists in regarding as possible a greater or less divergence and dissimilarity in the effects of causes having given degrees of similarity, *i. e.*, in a different estimate of the greater or less probability, or frequency, of such divergences in the various fields of scientific research, from physics and mechanics to psychology and the social sciences.

Determinism and indeterminism thus come to appear as the two extreme terms of a series of possible intermediate alternatives in which the alleged opposite characters of the two theories figure, mixed and combined in the most varied proportions.

To the above example of the application of the first of the methods, already mentioned, I will add another of the application of the second and the third. The criticism to which the idea of *quantity* has been recently subjected in the more abstract regions of mathematics has led, among other things, to a clearer recognition of the nature of the distinction between what are called "differences of degree" or "quantity" and other differences, which, in contradistinction to them, we call "differences of quality."

The conclusions arrived at on the subject may be briefly summed up as follows: Differences in *quantity* are only a *special case* of differences in *quality*. They are distinguished from the latter above all by the fact that the qualities, on which they are grounded, allow a fixed arrangement of the objects possessing them, that is, they can serve as criteria to distinguish, between any two of them, which precedes or follows the other in a certain fixed series of which they all form parts. Thus, for example, the resistance which different threads make to breaking gives rise to quantitative differences among them, inasmuch as of any two of them it can always be determined which will be broken more easily than the other. On the other hand, their differences, for example, of color (unless these concern only different gradations of the same color), can not be described as *quantitative* differences, because they are incapable of being employed as criteria for an arrangement in which a certain place belongs to each of the threads.

But if the aforesaid condition is indispensable in order that given differences may be described as *quantitative* differences, it is nevertheless insufficient to define completely the notion of quantity. For this we require the presence of further conditions, more directly connected with that special method of comparison which is denoted by the name of *mensuration*.

In other words, it is required that on the objects possessing the qualities in question some operation may be performed whose analogy to that of the arithmetical sum is sufficient to allow a precise meaning to be given to the phrase that one of them possesses the said quality in a degree double, triple, etc., that in which another possesses it.

Here also we have another example of the fact, already observed, that the methods employed by philosophers for the criticism of distinctions often result in the discovery of some new way of determining and justifying the distinctions which they aimed at destroying.

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DISCUSSION

LOGIC AND EDUCATIONAL THEORY

IN his courteous review of "A Primer of General Method," in No. 21 of the current volume of this JOURNAL, Professor Hibben states that any attempt to discuss logical theory from the pragmatic standpoint is almost sure to reveal certain structural weaknesses

peculiar to that way of thinking, and points out several places in the text where, as he believes, defects are plainly visible.

1. For example, no pragmatist warrant can be shown to account for the systematic necessity of judgment. "The element in the feeling of compulsion which expresses logical necessity is free of all pragmatic sanction."

Upon this point it seems sufficient to say that the logical necessity which belongs to any given judgment is a particular and concrete necessity. The ground of *A*'s judgment is influenced by *A*'s interests and purpose. *B*'s different interests and purposes may lead him to form a different judgment. The logical necessity is just as truly operative in the one case as in the other. It is hardly correct, then, to say that logical necessity "swings clear of all pragmatic variability," unless you have in mind some vague, shadowy, abstract "necessity-in-general" that dwells apart from the concrete particulars of our purposive daily life.

2. Again, Professor Hibben regards as a mere assumption the idea that hypotheses are formed always with a view to action. To connect any one of the famous hypotheses of science, the nebular hypothesis, the theory of gravitation, the Copernican theory, the theory of evolution or the theory regarding the ebb and flow of the tides, with the practical needs of man "would be a most unnatural and strained procedure." By way of refuting the statement that hypotheses are started under the spur of practical interest he chooses the Copernican theory as an example, and remarks that "the view that the earth is stationary and that the sun actually rises and sets is a far more useful, convenient, and practical idea than the Copernican theory. For the practical man it stands the pragmatic test most adequately."

Precisely. But why does not the astronomer retain it? Why does he seek and find another one? Professor Hibben answers: "For the astronomer it does not work. Let him satisfy himself with a different theory."

No answer could be more satisfactory to the pragmatist. Our personal, practical interests and purposes lead us to think and speak of the sun as rising and setting, and of the earth as stationary. The astronomer employs the other theory because practical convenience decides in its favor. To quote a writer,¹ who it is but fair to admit is open to the suspicion of pragmatist tendencies, it was "not because of any sheer failure to represent celestial motions, but the growing cumbrousness of the assumptions, and the growing difficulties of the calculations."

3. A third "structural weakness" is discovered in the statement

¹ Schiller, "Humanism," p. 59.

that "advancement in intelligence means organization into a systematic whole of each bit of knowledge that we possess." This statement, it would seem, necessarily involves the acceptance of the extraordinary theory that we shape our conduct from moment to moment "by our knowledge of the ends which the complex nature of the whole implies."

It is, however, one thing, surely, to speak of the way in which our knowledge grows, of the tendency towards an ideal system, and a slightly different thing to claim to have solved the riddle of the universe; for the latter is what is practically involved in having "before us as a conscious methodological procedure the practical ends involved in the systematic whole." The pragmatist is the last man in the world to deal with things in that wholesale fashion. He is satisfied if he can solve one small problem at a time. If one were asked for a pragmatic account of the process of organization of our knowledge into a systematic whole, one could not do better than take Professor Hibben's statement. "We follow," he says, "the lead not of far-off and concealed ends, but rather of the nature of the separate parts as they are in themselves and as related to each other." Each step forward, in the solution of the practical problems daily confronting us, brings with it a larger view of the world and its meaning, a more comprehensive organization of our knowledge. Reflection upon this growth of knowledge from the relatively unorganized, the rather fragmentary systems of childhood to the more comprehensive systems of later life warrants us in speaking of a tendency towards an ideally constructed system.

4. Professor Hibben states that the disjunctive judgment, since it expresses the nature of a system not in its relation to anything else but as a self-related whole with an individuality of its own, "is certainly one logical form at least which is not concerned with the adjustment of means to ends, and of practical values, but exhibits that which is an end in itself."

If, by "a self-related whole with an individuality of its own," we mean to denote a kind of system which in its nature wholly excludes the element of human purpose, there is probably nothing more to be said. But if, on the other hand, the element of purpose enters into every idea we possess, that element may legitimately be considered, must be considered, when we attempt to exhibit the whole nature of a system in disjunctive form. The purpose is immanent, not external. We may thus set forth the essential features of the system; and by doing so we are enabled to identify our problem, and decide upon our course of action. If it is a game of curling, and after consideration you decide that to win you must either draw around the guard or raise your last stone on to the winner,

you are then in a position to say which alternative you will choose. Subtract from any system the purposive element, and the remainder would be hardly worth considering.

5. So much for the logical side of the matter. On pragmatist principles knowledge is for action, and in this instance it was an interest in the practical problems of education that led into the field of logic. The important thing is the application of the doctrine to the theory of education, and here Professor Hibben has offered a few criticisms upon which some comment may be made.

There is, first, the complaint that confusion has arisen between the idea of "being interested in what one is studying," and that of "being interested in the practical utility which the subject-matter may possess." Then there is expressed the fear of a certain "dwarfing" that will inevitably follow both of intellectual power and of character if during the formative period of life the child lives in an atmosphere in which utility is regarded as the sole motive for the acquisition of knowledge. Finally there is a plea for "those indirect uses of knowledge," which are somehow "too subtle, too far-off in their effects, too complex, too cumulative for any one to detect, and name, and tabulate," but which, nevertheless, "characterize richly stored minds."

There is no need whatever for any confusion between interest in what one is studying and interest in its practical utility. It is, indeed, not only possible, but also essential, that the rich materials to be found in certain subjects should make their appeal to the student. The esthetic needs of the learner demand an acquaintance with literature and other forms of fine art. History in certain of its phases effectively meets those needs, while in other aspects it possesses a practical value. In all forms of practical activity in which students engage while carrying out their plans and purposes, there is a continual appeal to the artistic side of their natures as well as to the practical and utilitarian.

It is the business of the teacher to base his practise upon some theory of education. The more clearly he realizes the aim of education the better for his school. But it is no part of his duty to indoctrinate his pupils with educational theory. Most teachers recognize that anxious reflection by a child upon his moral and intellectual progress is not what is required, but, rather, active and interested participation in the business of life. As a matter of fact the opponents of the doctrine of interest are the chief offenders at this point. It is they who are guilty of the sin of preaching up the ultimate utility of this, that, or the other art, or study as an incentive, in a usually hopeless attempt to get their pupils to study something at present outside of the range of their interests.

The phrase, a richly stored mind, is capable of more than one interpretation. It may mean a mind stored with ideas which have been acquired for specific purposes, the achievement of a definite end, the accomplishment of this task, the solution of that practical problem; the mind of an active, inquiring, alert individual whose program of work and play has been determined by his personal needs, practical, esthetic, moral, spiritual, in the actual historical order of their development. Or it may mean a mind stored with ideas which in the order of their acquisition bore no direct relation to the learner's needs, but were carefully chosen for him by some outside authority with a view to possible future needs; the passively obedient, acquiescent, docile mind with the traditional stock of knowledge furnished by the schools, bearing the stamp of their approval, and therefore possessing that "fine flavor" of which Professor Hibben speaks with such enthusiasm.

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REVIEWS AND ABSTRACTS OF LITERATURE

Psychology: General Introduction. CHARLES HUBBARD JUDD. New York: Charles Scribner's Sons. 1907. Pp. vii + 389.

Laboratory Manual of Psychology. CHARLES HUBBARD JUDD. New York: Charles Scribner's Sons. 1907. Pp. x + 127.

These are the titles of the first two volumes of a series of three books "designed to introduce the student to the methods and principles of scientific psychology." The third volume will be devoted to a description of apparatus and the general equipment of the laboratory.

The very comprehensive aim of the "General Introduction" is stated in the preface as follows: "(1) to develop a functional view of life, . . . (2) to adopt a genetic mode of treatment, . . . (3) to give to the physiological conditions of mental life a more conspicuous place than has been given by recent writers of general text-books on psychology, . . . (4) to make as clear as possible the significance of ideation as a unique and final stage of evolution. The clear comprehension of the dominant importance of ideational processes in man's life is at once the chief outcome of our study, and the complete justification for the science of psychology. . . This work is intended to develop a point of view which shall include all that is given in the biological doctrine; while at the same time it passes beyond the biological doctrine to a more elaborate principle of indirect ideational adaptation."

Almost one third of the volume is devoted to the nervous system and sensation. Chapter II. is an admirable presentation of the evolution of the nervous system. Beginning with the results of Jennings's study of unicellular organisms, the author traces the differentiation of primitive

functions through the ascending scale. The progressive development of higher centers is the fact of chief significance. These permit the organization of activities, and they provide for greater complexity and unity of behavior. The evolution of higher centers culminates in the association centers (*Flechsig*) in man. These association centers are less predetermined by heredity than are the lower centers. They are, therefore, molded largely by individual experience. They are the instrument of the more delicate and comprehensive "indirect adaptations" of the individual. These association centers as the organs of ideation thus constitute the essentially human higher story added to the vertebrate nervous system.

The chapter on the "Human Nervous System" is well conceived, compact, and effectively illustrated. Two exceptions to the general clearness of statement deserve passing mention. The victim of the "famous crowbar" accident is by implication credited with no change in his mentality as a result of the accident. It is, of course, well known that a profound alteration in disposition and personality actually occurred. Again, the sharp distinction drawn between sensory and motor areas of the cerebral cortex is misleading to the young student. No suggestion follows to emphasize the essential identity of location of these areas.

In pursuit of functional and genetic aims, the author finds it useful to substitute for the tripartite division of mind the following five classes of phenomena: (1) Sensation factors, (2) relations between sensations (perceptual fusions), (3) attitudes (corresponding to feeling, interest, attention), (4) memory contributions to experience (including memory images of sensations and sensory relations and attitudes), (5) ideational relations. These constitute the characteristic forms of human consciousness, and include such facts as experiences of language and forms of scientific thought.

The functional and genetic trend is still further indicated by such chapter headings as (VI.) "Sensations and their Functional Relations," (VII.) "Experience and Expression," (VIII.) "Instinct and Habit."

Furthermore, we are not allowed to forget that the central and unique concept of psychology is that of the self. The essential function of the nervous system is organization of experience. The processes of consciousness are mainly those of association and integration. "All forms of consciousness are types of organization." Psychic complexes are continually undergoing transformation and translation to higher levels. The whole treatment from this point of view might be called a revised edition of apperceptionism carried out in a thoroughgoing manner.

With such a background, the contrast phenomena of forms of dissociation loom most vividly in Chapter XIV. Here come illusions, hallucinations, sleep and dreams, fatigue, effects of narcotics, alcohol, auto-intoxications, hypnosis, dual personality, and insanity. This is decidedly one of the most important chapters of the book.

While maintaining for the most part the strict attitude of natural science, the author has not hesitated to introduce, wherever necessary, philosophical discussions. The attempt to reconcile the personality cate-

gory with rigid determinism may leave some readers a bit mystified and unconvinced. For this reason, perhaps, the chapter on the self is the least successful.

When one recalls the multiple and difficult aims of the work, the result constitutes a notable achievement. Many will vote it the most comprehensive introductory text that has recently appeared.

The full treatment of the nervous system, the careful consideration of dissociation phenomena, the suggestive chapter on language, the discussion of imagination and concepts containing illuminating paragraphs on the uncritical, the literary, and the scientific forms of imagination, the genetic psychology of concepts, the psychology of logical processes, and no less the final chapter on the applications of psychology, wide in scope, rich in learning, and intensely practical,—all these produce an impression of fullness and adequacy to be desired in a general introduction.

The style is pedestrian, simple, and generally clear. The illustrations, while not extensive in range, are taken from ordinary experience, and are employed most effectively. Marginal paragraph headings give the page a somewhat dense and heavy appearance distinctly less inviting to the beginner than the more open formation produced by bold-faced headings in the body of the text.

Opinions will inevitably differ as to the best order of topics in an introductory book. But it is questionable whether a psychology which abominates psychic atoms and emphasizes personality should adopt the synthetic order. Thus the student is led through the mazes of neurology and sensation and perception of space and time, for many weeks, before there is any quickening contact with the complex phases of his consciousness with which he has most acquaintance.

The manual is designed especially for use in those institutions where the laboratory facilities must be limited. The essentials of equipment for the use of the manual need not involve an outlay of more than two hundred dollars. Following an admirable introduction, which includes careful directions for procedure in experimentation, are twenty-five groups of experiments. These cover the field of sensation, motor activities, circulation changes, effects of practice, fatigue, memory, attention, and esthetic appreciation. Many suggestive supplementary questions are embodied in the various chapters.

The whole is a crystallization of years of successful laboratory experience, and the pedagogical strategy of selection, arrangement, form of statement, recapitulations, and the like, is deserving of most enthusiastic appreciation.

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Hermann von Helmholtz. LEO KOENIGSBERGER. Translated by Frances A. Welby, with a preface by Lord Kelvin. Oxford: The Clarendon Press. 1906. Pp. xviii + 440.

The *Life of Hermann von Helmholtz*, by Dr. Leo Koenigsberger, professor of mathematics at Heidelberg, published in three volumes by

Friedrich Vieweg und Sohn in 1902 and 1903, has been abridged and translated into English with correctness and tolerable literary skill by Lady Welby. In view of the large range of sciences covered by the work of Helmholtz and the fact that the original is in large measure an exposition of this work, the translator deserves much credit for the accuracy with which the terminology is used and the clearness with which the ideas are expressed. The translation is not perfect. For example, the first words of the volume—the title of Chapter I.—are in the German “Das Elternhaus von Hermann Helmholtz.” The English version is “The Parentage of Hermann von Helmholtz.” The “von” is incorrect, and, as a matter of fact, is not in the title as given in the table of contents. It may not be possible to translate “Elternhaus,” but the word used lacks both force and accuracy. Or, to take a fairly typical sentence from the first page—the German text states that Helmholtz’s father “wählte Philologie als Brotstudium, wenn er auch am liebsten seiner innersten Neigung folgend Philosoph geworden wäre.” This is much weakened in the English: “He therefore chose the study of the classical languages as his profession, although his inclinations would have led him to prefer philosophy.”

The translation is, however, satisfactory, and the abridgment is made as skillfully as could be expected. It would not perhaps be fair to ask that the index lacking in the original should have been added, though it is much needed, in spite of the analytical table of contents. Any work must of course suffer from an abridgment. The writer regrets that the original biography itself is not much fuller than it is, more especially in the direction of letters from Helmholtz, leaving room for a shorter and more readable biographical sketch for the general public. As an example of the drawbacks of an abridgment, there may be quoted the account of the death of Helmholtz’s first wife, which in the English reads:

“Helmholtz’s working capacity, however, became gradually exhausted, since the condition of his beloved wife was growing more and more serious; her relatives took charge of the family, and gave ceaseless attention to the invalid and care to her children. ‘It was my privilege,’ writes her sister, ‘to be with her to the end. She died conscious, in simple strength as she had lived, fearless, with her friend beside her, ever turning towards the highest, on December 28, 1859.’

“Her husband wrote of her: ‘I enjoyed the purest and highest happiness that marriage can give one; it was too beautiful for this world.’”

The last sentence is taken from a long letter addressed by Helmholtz to Dr. Binz, giving a detailed account of the last illness of his wife. The paragraph immediately preceding the one quoted is:

“Vom 24. Abends hob sich ihr Puls wieder, sie wurde wieder warm, bekam den Gebrauch ihrer Sinne wieder, nur war sie furchtbar matt und kurzathmig. Deshalb jammerte sie, das es noch nicht vorüber sei. Sie hatte noch ziemlich gute Nächte, liess sich vorlesen. Endlich am 28. früh, als sie sich eben wollte nach dem Sophea hinüberbringen lassen, trat ihr eine übermässige Menge von Sputis in die Luftröhre, und in weniger als 5 Minuten war sie erlöst.”

The omitted parts give a more correct picture of Helmholtz's attitude and make less unexpected his remarriage within a year and a half.

While no special objection can be made to the way in which the abridgment has been executed, the writer must make serious complaint that the fact that we have to do with an abridgment is not stated on the title-page. At the bottom of page vi, under the author's preface, will be found the words "In the English edition the Life has been slightly abridged, with the permission of the author and German publishers." Most readers of the translation would not notice this foot-note, and none of them would understand from it that the three original volumes of 938 pages had been reduced to the 458 larger pages of the translation, the omissions amounting to about one third of the original text. Of the eight portraits and three pages of manuscript in the original, only three portraits are given in the translation, while no mention is made of the omissions. Lord Kelvin states in his preface: "The Oxford University Press has earned the gratitude of all English-speaking scientific workers in giving to them this English version of the very valuable and interesting Life of Helmholtz, by Dr. Königsberger." But surely the Oxford Press should print a new title-page, stating that the volume has been translated and *abridged* from the German work.

This notice is concerned with the translation only. It is not a review of Dr. Koenigsberger's book, and an attempt to appreciate Helmholtz's vast contributions to science would not be in place. A few words may, however, be added in regard to what Helmholtz accomplished for psychology and philosophy. As he tells us, his primary interest was always in mathematical physics; but he is one of the founders of modern psychology, and perhaps of modern philosophy. Lotze, Fechner, Wundt, and Helmholtz bear on their shoulders the structure of experimental psychology, and the share of Helmholtz is not the least. There would be less agreement as to his part in philosophy, but it is not small. Helmholtz and the school of Johannes Müller represent the rescue of philosophy by science from the vagaries into which German metaphysics had wandered, and whatever value may be placed on their actual contributions or on those of their successors—Mach, Boltzmann, Ostwald, Poincaré, and others—the writer believes that they, and Helmholtz most of all, have broken the way along which philosophy must advance.¹

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¹ In a journal devoted largely to the exploitation and suppression of pragmatism, the following from a note on causation published in the biography as of the year 1855 may be quoted: "Hence we are induced by the strongest motives to *desire* its validity. It is the groundwork of all our thoughts and acts. Until we have it we can not test it; therefore we can but *believe* in it, *act* upon it, and find it justified by fair tests. We must anticipate the consequences; then the consequences will be its confirmation."

Light Reactions in Lower Organisms. I. Stentor cœruleus. S. O. MAST. *Journal of Experimental Zoology*, Vol. III., No. 3, 1906. Pp. 359-399. II. *Volvox.* S. O. MAST. *Journal of Comparative Neurology and Psychology*, Vol. XVII., No. 2, 1907. Pp. 99-180.

These two papers are characterized by the intensive, detailed methods employed by the author in his study of the reactions to light of two familiar lower organisms. Special attention and care were given to determining the direction and intensity of light falling upon the animals while they were in the experiments, in other words, to the regulation of the stimulus. The results with stentor are for the most part confirmatory, though obtained independently, of those obtained by Jennings upon the same organism. The light reactions of volvox had previously been considered in some detail by Holmes, with whose conclusions the present author takes a number of exceptions.

The observations upon stentor are divided under three main headings, viz., those upon moving stentors, upon attached stentors, and upon the threshold for light stimuli. The responses of stentor to light fall in line with the behavior of the protozoa in general, orientation and a course away from the light being brought about by motor reactions, which are repeated until the animal is in the position of least stimulation. This is attained when the anterior end is directed away from the source of light. The motor reaction is induced by an increase of illumination, whether this is caused by a change in the animal's position relative to the light, or by an actual increase in the intensity of the light itself.

Attached stentors do not orient to the direction of the light, largely because the tendency to maintain a position perpendicular to the surface to which they are attached overcomes the tendency to orient with reference to the light. Furthermore, the threshold for light stimuli is much higher in attached stentors. In free-swimming individuals the minimum threshold for animals stimulated by rays perpendicular to the longitudinal axis is 1.2 candle-meters, but in those stimulated by light striking the anterior end it is only 0.25 candle-meter. There is considerable variation in the threshold, the animals becoming readily acclimated to a given intensity.

The author's statement (p. 392) that "stentors once oriented remain oriented, if the light intensity is not too high, because they are least sensitive to light when the rays strike the posterior end," does not seem satisfactorily explained if we accept his conclusion that the motor reaction is the only means by which orientation is brought about and maintained. According to the motor-reaction precept, the light has no effective action until it has increased in intensity to the threshold increment, when a motor reaction is induced, which either places the organism again in orientation, or is repeated until that relation is attained. It is certainly not probable that stentor, once oriented and moving in a straight line from the light, can maintain that direction without some external directive force acting upon it to keep it oriented. If the motor reaction is not the factor which brings about this result, it would seem that there must be some other means by which stentor responds to changes in light intensity

less than the threshold which causes the motor reaction, so that when it begins to swerve from the proper alignment it is brought back again before it has gone so far that the motor reaction is induced. Will this part of the results have to be explained after all by something similar to the much despised "tropism theory"?

The first part of the paper on *volvox* is concerned with the structure and natural history of this interesting organism. Among other things the author states that "the eye-spots in *volvox* are located on the outer posterior surface of the individuals of which the colonies are composed, not on the outer anterior surface, as represented by Overton." A detailed and careful study of the method of locomotion and an analysis of the factors which bring about orientation are then made. Three of the sections in the author's summary embody the conclusions which are perhaps of most general interest. These are as follows (p. 178):

"The direction of motion in *volvox* is regulated by the relative light intensity on opposite sides of the colony, regardless of the ray direction."

"Orientation is not the result of 'trial and error' reactions as in *stentor*, *euglena* and other forms. *Volvox* colonies make no errors in this process."

"There is no evidence of motor reaction in a *volvox* colony, taken as a whole. Orientation is, however, brought about by motor reactions in the individuals which constitute the colony. If opposite sides of a colony are unequally illuminated, the individuals in the colony continually pass from regions of higher to regions of lower light intensity, and *vice versa*, as the organism rotates. This change in light intensity induces motor reactions in the individuals, which result in orientation of the colony. The motor reaction in positive specimens is induced only when the intensity to which the zooids are exposed is decreased, and in negative colonies only when it is increased."

We find, then, that the orientation of *volvox* is really a secondary result brought about by the independent reactions of the individuals of which it is composed. Although a definite result is obtained, the only coordination between the individuals is one due to the positional relation which they bear to one another and to the colony as a whole with respect to the light. This may, perhaps, be an additional reason for considering the *volvox* spherule a colony of individuals, and not an individual in itself.

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JOURNALS AND NEW BOOKS

RIVISTA FILOSOFICA. January-February, 1907. *La funzione religiosa della filosofia* (pp. 3-35): P. MARTINETTI. - The function of philosophy is to promote through knowledge the supreme interests of life. Philosophy discards mythical elements. Philosophy, in its struggle with traditional faith, is not negative, but reconstructive. The positive result

of philosophic thought is the religious education of humanity. *Quid est veritas?* (pp. 36-56): B. VARISCO. - Pilate said to Jesus, "What is truth?" There are many who take the same skeptical attitude toward Christianity. A true metaphysics presupposes a final ethics, and *vice versa*, but the attempt to reach metaphysics through empirical ethics must be abandoned. Man can not help desiring happiness. Christianity aims at true happiness. *La Ginnastica dello spirito nella pedagogia del secolo XIX* (pp. 57-87): A. PIAZZI. - The individualistic hedonism of the eighteenth century has been replaced by ideals associated with the names of Herder, Herbart, and Pestalozzi. *Filosofia e filosofia del dritto* (pp. 88-106): A. PAGANO. - The revival of philosophy of right rescues that study from a long period of depression which had its origin in prevailing philosophical opinions hostile to the presuppositions of the philosophy of right. So objective a theory can not be reconciled with subjective metaphysics. *Rassegna bibliografica* (pp. 107-127). *Giosuè Carducci—In memoria di C. Cantoni—Sull'ordinamento degli studi filosofici universitari* (pp. 128-136). *Sommari delle riviste straniere. Libri ricevuti.*

RIVISTA FILOSOFICA. March-April, 1907. *Dalla critica alla metafisica* (pp. 145-164): A. CHIAPPELLI. - The starting-point of critical philosophy is the relativity of the object of knowledge to the mind. The spirit transcends its limitations in perceiving them. Determinism in science has to be reconciled with spontaneity in ethics and esthetics by the discovery of a higher principle, presumably spirit. *La morale di Tertulliano nei suoi rapporti colla filosofia stoica* (pp. 165-183): G. BONFIGLIOLI. - Tertullian was by temperament of the extreme stoic type. There is a striking parallelism between his opinions on ethics and those of the stoics, due to his faith in a concept of nature and in the maxim "live according to nature." *Le premesse dell'umanismo* (pp. 184-200): G. DELLA VALLE. - Humanism is the psychological interpretation of criticism, the point of union between empiricism and rationalism. Epistemological humanism is born of the effort to overcome the dualism of form and content. Individualism in science and ethics raises the problem of the relation of the individual to society. *Dualismo biologico e limiti della responsabilità penale* (pp. 201-224): R. MONTUORI. With regard to criminal responsibility two theories have been held; the classical one, which emphasized free will and declared punishment the rendering of justice because deserved, and the relatively biological one, skeptical of free will. Primitive vital activity shows two opposed forms, reflex and inhibitive. Reflex acts are for defense. This purpose is a test for reflex activity. The will has its origin primarily in the faculty of arrest. (To be continued.) *Rassegna bibliografica. Opere di:* B. Labanca, A. Meinong, Gustave Belot, Th. Ribot, D. Draghicesco, Guiseppe Prezzolini (pp. 225-251). *Bollettino bibliografico. Opere di:* Giordano Bruno, Camille Hèmon, E. Buonaiuti, Sully Prudhomme, George Dumas, A. Schopenhauer, F. Delvolve (pp. 252-258). *Articoli di riviste straniere. Notizie e pubblicazioni. Voci di lettori. Sommari delle riviste straniere. Libri ricevuti.*

REVUE PHILOSOPHIQUE. November, 1907. *Doit-on fonder la science morale et comment?* (pp. 449-475): A. FOUILLÉE. — An extract from the introduction to the author's "Morale des idées-forces," which has just appeared. Ethics is a genuine science, having its basis in logical, psychological, and epistemological principles of which the leading idea is that of the "idées-forces." *Le rôle civilisateur des abstractions: du totémisme au socialisme* (pp. 476-494): E. DE ROBERTY. — Abstractions are necessary to scientific progress. The abstractions and generalizations of totemism were to primitive society what those of socialism are to modern society, therefore socialism may be called modern totemism. *L'énergétique et le mécanisme au point de vue des conditions de la connaissance* (pp. 495-517): A. REY. — Both energism and mechanism may be possible scientific methods, but the former is limited to mere non-hypothetical description, while the latter anticipates our possible experiences, and is, therefore, more suited to advance physics. Energism is a useful auxiliary procedure, but always subordinate to mechanism. *De la "plasticité" dans l'association de idées* (pp. 518-538): DROMARD. — A classification of the various degrees of plasticity which the association of mental images presents in characteristic forms of normal and pathological activity. *Revue critiques*: (Morton Prince, Oosterreich, C. Sabatier) *La dissolution de la personnalité*: S. JANKELEVITCH. (Orestano, Trojano) *Le concept de valeur d'après deux ouvrages récents*: J. SEGOND. *Analyses et comptes rendus*: F. Evillin, *La raison pure et les antinomies*: L. DAURIAC.

Busse, Ludwig. *Die Weltanschauungen der grossen Philosophen der Neuzeit*. Dritte Auflage. Leipzig: B. G. Teubner. 1907. Pp. 164. 1 M.

Cesca, Giovanni. *La filosofia dell'azione*. Milan: Remo Sandron. 1907. Pp. 330. 4 l.

Cohn, Jonas. *Führende Denker*. Leipzig: B. G. Teubner. 1907. Pp. 117. 1 M.

Flügel, O. *Herbarts Lehren und Leben*. Leipzig: B. G. Teubner. 1907. Pp. 156. 1 M.

NOTES AND NEWS

WE take the two following notes from *Nature* for November 7: "The Huxley memorial medal of the Royal Anthropological Institute was presented to Professor E. B. Tylor, F.R.S., on Tuesday, November 5, in recognition of his distinguished services to anthropology. On October 2 Professor Tylor celebrated his seventy-fifth birthday, and the anniversary was made the occasion of the presentation to him of a volume of essays representative of British anthropology. The current volume of the *Journal of the Royal Anthropological Institute* is dedicated to Professor Tylor; and the presentation of the Huxley memorial medal is another mark of the esteem in which he is held by anthropologists."

"No one more fully understands the danger of indiscriminately using a questionnaire than Dr. J. G. Frazer, who in publishing through the Cambridge University Press his 'Questions on the Customs, Beliefs, and Languages of Savages' is careful to point out the true method of utilizing them. They are intended, not so much to be put directly to the savage, as to indicate to the inquirer in the field those subjects upon which students at home desire information. Leading questions should be avoided, as they tempt the savage to give answers which he thinks will be acceptable. The savage should be encouraged to talk in his usual vague way on the subject under investigation until he has exhausted his information for the time, when a question judiciously asked may jog his memory. Unexpected information casually offered is the most valuable of all, 'first, because not being foreseen by the civilized man it can not have been consciously or unconsciously suggested by him to the savage; second, because it may put an entirely fresh complexion on a whole series of customs and beliefs about which we had fancied that we knew all that was worth knowing.' If used with this much needed caution, this suggestive collection, which is supplementary to the manual issued by the Royal Anthropological Institute, will be of much value to travelers with a taste for investigating the manners and customs of savage or semi-savage races."

THE *Nation* for December 5 writes as follows regarding the present movement in Germany toward some measure of cooperation, in church work and in scientific research, between Catholic and Protestant theologians: "The efforts on the part of prominent Protestant theologians of Germany to come to some kind of understanding with the more independent representatives of Catholic scholarship in the interests of common scientific research and practical church work, are producing a literature of their own. The well-known university address of Professor Adolf Harnack, delivered in Berlin on the last anniversary of the Kaiser's birthday, had this for its theme, and attracted wide attention. Now Professor Tschackert, of the University of Göttingen, has just published a work of one hundred and forty-three pages (Munich: C. H. Beck), entitled 'Modus Vivendi: Grundlinien für das Zusammenleben der Konfessionen im deutschen Reich,' in which he outlines a plan showing why and how the Catholic and the Protestant churches, without in any way sacrificing any fundamental principles, could yet cooperate in most of the departments of church work, such as charity, missions, social problems, and the like. Tschackert is, however, convinced that such an understanding can not be reached with the extremists in either camp."

THE Board of Anthropological Studies at the University of Cambridge recommends the establishment of a diploma in anthropology similar to the one offered at Oxford. The work of three terms, not necessarily consecutive, is to be required from candidates.

PROFESSOR J. G. FRAZER will fill the chair of anthropology recently founded at Liverpool.

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